THE MEASURE OF THE JUDGE: AN EMPIRICALLY-BASED FRAMEWORK FOR EXPLORING TRIAL JUDGES' BEHAVIOR

Peter David Blanck, Robert Rosenthal, Allen J. Hart, Frank Bernieri

"A judge ... is more than a moderator .... Justice does not depend upon legal dialectics so much as upon the atmosphere of the courtroom, and that in the end depends primarily upon the judge."5

I. INTRODUCTION

The courts, legal practitioners, scholars, and social scientists have long recognized that judges' behavior, both verbal and nonverbal, may have important effects on trial processes and outcomes.6 For example, appellate courts have cautioned repeatedly that juries in criminal trials accord even the most subtle behaviors of the judge great weight and deference. One judge concluded that juries "can be easily influenced by the slightest suggestion coming from the court, whether it be a nod of the head, a smile, a frown, or a spoken word."7

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3 Graduate Student in Psychology, Harvard University.
4 Assistant Professor of Psychology, Oregon State University. Ph.D. 1988, Harvard University.
5 Judge Learned Hand in Brown v. Walter, 62 F.2d 798, 799-800 (2d Cir.1933).
Over the years, the courts have struggled, on a case-by-case basis, to assess the impact, style, and consistency of judges' behavior. In the absence of a practical, reliable, and valid framework, courts remain reluctant to review a contention that a judge's verbal or nonverbal behavior somehow may have unfairly influenced the trial process.8

This article first describes an empirically-based framework for exploring trial judges' behavior in actual trials.9 We then present some preliminary and exploratory results derived from our ongoing studies of judges' behavior with special emphasis on two areas of analysis: (1) descriptive—whether there are distinct and interpretable "global dimensions" of judges' behavior, particularly in the way judges relate to their juries, and (2) predictive—whether the delineated "global dimensions" of judges' behavior can be used to predict (or be predicted by) other more fine-grained "micro" nonverbal behaviors of these same judges, such as eye contact with their juries.10

In the last section, we discuss how the framework we present may prove useful to courts, legal practitioners, scholars, and social scientists studying judges' behavior.11 The final section also highlights how our framework may help in the assessment and implementation of the recently adopted amendments to the Model Code of Judicial Conduct (1990), set forth in Part IV(A).12 These amendments relate to the relationship between trial judges' verbal and nonverbal behavior and the appearance of courtroom fairness.

II. A FRAMEWORK FOR THE STUDY OF TRIAL JUDGES' BEHAVIOR

A. Studying the Appearance of Justice

The data employed in this article were gathered as part of an ongoing study of judges' behavior, in which we videotaped portions of actual criminal misdemeanor jury trials.13 Our initial research explored what has been described by the courts as "the appearance of justice."14 That

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9 Others have studied judges' working styles and have found, not surprisingly, that their qualitative methods demonstrate that judges vary in working styles. See Atkinson & Neuman, Judicial Attitudes and Defendant Attributes: Some Consequences for Municipal Court Decision-Making, 19 J. Pub. L. 69-87 (1970). The empirical study presented in this article is the first attempt to support this proposition by employing quantitative assessment of judges' actual behavior. See infra notes 102-09 and accompanying text.

10 See infra notes 74-100 and accompanying text.

11 See infra notes 105-15 and accompanying text.

12 See infra notes 112-14 and accompanying text.

13 For a detailed review of the methodology, see The Process of Field Research, supra note 2, at 342-51; Appearance of Justice, supra note 2, at 101-13.

is judges' behavior or conduct must "appear" to the trial participants\textsuperscript{15} to be fair and impartial. In certain extreme circumstances, courts have held that the "appearance" of judicial unfairness alone may deny defendants their constitutionally protected right to a fair and impartial trial.\textsuperscript{16} Thus, the appearance of unfairness alone may be grounds for reversal.\textsuperscript{17}

During a criminal jury trial, judges, like other human beings, develop beliefs and attitudes about certain aspects of the trial process, such as about the defendant's guilt or innocence. The development of such beliefs is not necessarily bad. We want humane and concerned judges sitting in our courts. However, these beliefs sometimes influence (or "appear" to influence) judges' behavior in relating to juries, often in ways difficult for trial counsel to document for the appellate record. Our initial studies explored the relationship between judges' behavior and trial fairness as perceived by counsel and their clients, jurors, and the judges themselves. This line of study described how judges may reveal certain beliefs or attitudes to juries solely through their nonverbal behavior at trial.\textsuperscript{18}

Our earlier studies were useful for exploring the longstanding conception that procedural fairness, at least in terms of judges' behavior, is not a fixed requirement unrelated to the circumstances and individuals involved in a particular trial. Not surprisingly, our earlier studies and discussions with participating judges showed that a fair and impartial trial is always the goal. Nevertheless, it seemed to us that a judge's degree of involvement or general style of behavior at trial represents an ongoing process of judgment and discretion, guided by legally recognized limits.\textsuperscript{19} It is from this perspective and empirical background that we focus our exploratory analyses here toward the development of a practical framework for describing and assessing judges' behavior.

\section*{B. Studying Trial Judges' Behavior}

\textsuperscript{15} We have defined trial participants to include judges, counsel, parties, witnesses and jurors. Elsewhere, we have included the press and the public generally to be "participants" in the trial experience. See Blanck, What Empirical Research Tells Us: Studying Judges' and Juries' Behavior, 40(2) Am.U.L.Rev. XX (forthcoming 1991).

\textsuperscript{16} See Bollenbach v. United States, 326 U.S. 607, 612 (1946); see also State v. Larmond, 244 N.W.2d 233, 236 (Iowa 1976) (defendant is not required to show that jurors were actually prejudiced by judge's behavior but merely that jurors could have inferred judicial bias); see generally Appearance of Justice, supra note 2, at 90 n.n. 4, 5.

\textsuperscript{17} See Bollenbach, 326 U.S. at 614 (fact that evidence may have supported conviction is irrelevant if appropriate standards and procedures are not followed); see also Larmond, 244 N.W.2d at 236; see generally Appearance of Justice, supra note 2, at 89-90.

\textsuperscript{18} Appearance of Justice, supra note 2, at 91-92. Through our collaborative efforts with real judges, we are beginning to understand what many judges and practitioners already intuitively "know" about the trial process. We hope our efforts may aid judges, courts, and other trial participants to more fully understand and assess the impact of their behavior during the trial and to understand the values and behaviors underlying the "appearance of justice."

\textsuperscript{19} Appellate courts have attempted to balance a number of factors in assessing the propriety of a judge's behavior during a jury trial. Four such factors have been applied: "(1) the materiality or [legal] relevance of the behavior, (2) the empathic or overbearing nature of the behavior, (3) the efficacy of any curative instruction used [by the judge] to correct the error, and (4) the prejudicial effect of the behavior ... in light of the trial as a whole." Appearance of Justice, supra note 2, at 95-96. As is often the case with such "sliding scale" assessments, different courts have weighed the importance of these factors differently depending on the circumstances of the case. E.g., United States v. Olgin, 745 F.2d 263, 268-69 (3d Cir.1984) (appellate court concluded it proper to weigh the totality of these four factors in determining whether the "quantum of harm" from a trial judge's behavior amounted to reversible error), cert. denied, O'Brod a v. United States, 471 U.S. 1099 (1985).
To guide our study of judges' behavior we developed a working theoretical model. As described in greater detail in Part IV(B)(2), this model or conceptual framework helps identify the variables that need to be studied to achieve a more fine-grained understanding of trial judges' behavior. The basic elements of this framework are: (A) the background variables of the trial participants; (B) the judge's attitudes and beliefs about trial processes prior to trial outcome; (C) the verbal and nonverbal behaviors that communicate the judge's attitudes and beliefs to the trial participants, and, in particular, to the jury; (D) the outcome of the trial itself, in terms of the jury's decision; (E) the judges' attitudes and beliefs about trial processes after trial outcome; and (F) the sentence imposed by the judge.

The analyses in this article are designed to aid in the development of a practical description of judges' verbal and nonverbal communicative behavior. That is, an exploration of the "C" variable in our working model. Moreover, the analyses extend the descriptive power of our model by exploring (1) judges' "global" or basic behavioral dimensions in relating to juries, and (2) judges' "micro" or more fine-grained nonverbal behaviors in relating to their juries. The analyses also examine the relationship between these two types of variables.

Our research framework attempts to maximize the "external validity," or the real-world generalizability, of our findings and the precision of rating judges' behavior. In the present study, this goal is achieved by examining the videotapes of actual trials and employing independent groups of raters to assess the communicative content of the videotapes. Judges' behavior analyzed in this study came from five California state court judges who were videotaped delivering final pattern jury instructions to jurors in thirty-four criminal trials. Videotaping the trials enabled the systematic separation and comparison of the verbal and the

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20 See Appearance of Justice, supra note 2, at 101-02. The working model, described elsewhere in detail, is intended to serve generally as a theoretical guide for researchers and is not intended as a hard-and-fast predictive model for practitioners. Id. at 102. See generally The Process of Field Research, supra note 2, at 342-43.

21 See infra notes 128-35 and accompanying text.

22 For example, as embodied in the general communicative dimensions of "warmth" or "professionalism."

23 For example, as expressed via head nods, eye contact, or body movements.

24 Cf. Ebbesen, & Koneeci, On the External Validity of Decision Making Research, in Cognitive Processes in Choice and Decision Behavior (T.S. Wallsten ed. 1980). The process for evaluating the videotapes has been set forth in great detail in The Process of Field Research, supra note 2, at 349-53; Appearance of Justice, supra note 2, at 109-14; and Blanck, Rosenthal, Hart & Bernieri, Trial Judges' Verbal and Nonverbal Behavior in Criminal Jury Trials: Descriptive, Psychometric, and Predictive Analyses (working paper 1990). Basically, raters are assigned randomly to rate the judges' taped behavior on different emotional scales, and these ratings are then used in developing the composite or global dimensions as described herein. A separate group of raters assess the judges on the "micro" nonverbal behaviors, for example, head nods, smiles, and eye contact. See infra note 73 and accompanying text.

25 The judges studied included three males and two females.

26 The analyses here focus on judges' behavior while delivering final jury instructions because we were interested in describing the type and generality of this information during this important part of the trial process, when the judge addresses the jury on the law. Moreover, because all of the judges read "pattern" jury instructions, it was possible to isolate or "naturally control" the effects of the judges' behaviors from the content of the instructions themselves. The Process of Field Research, supra note 2, at 349-51.
purely nonverbal channels of the judges' communication.\textsuperscript{27}

It is clear that individuals' verbal and nonverbal channels of communication convey different types and amounts of information.\textsuperscript{28} As suggested above, courts have long recognized the possible impact of a judge's nonverbal behavior alone on perceptions of trial fairness.\textsuperscript{29} Accordingly, the analyses are organized by both the "content-present" and "content-absent" channels of communication. "Content-present" refers to verbal channels of communication, such as the judges' normal speech-only cues, and "content-absent" refers to purely nonverbal channels of communication, such as facial expressions, body movements or tone of voice.\textsuperscript{30} Together, the analyses aid in the development of a framework for studying judges' communicative behavior during "live" trials.

III. THE MEASURE OF THE JUDGE: DESCRIPTIVE AND PREDICTIVE ANALYSES

This part sets forth two types of empirical analyses that may prove useful for assessing judges' communicative behavior. For each analysis, we discuss related research findings, describe our findings, and frame future research questions in the area.

A. Analysis I: Descriptive Aspects of Trial Judges' Behavior

1. Background and Method of Study

The first analyses are aimed at delineating the global dimensions of judges' verbal and nonverbal behavior in relating to their juries. The term "global dimension" is used to describe the general manner or mode of judges' communicative and interpersonal behavior--behavior often conveyed independently of verbal content.\textsuperscript{31} Although a particular global behavior may reflect a judge's general orientation in relating to others during the trial, judges probably show different global behaviors at different times, depending on the circumstances of the trial process. For example,

\textsuperscript{27} The dimensions of verbal and nonverbal behavior were assessed from altered versions of videotapes, including: (1) normal video-and-audio tapes, (2) audio-only tapes (normal speech only), (3) visual-only tapes (facial and body cues only), and (4) tone-of-voice-only tapes (by a "filtered" audio recording that allowed rhythm, pitch, and tone to be conveyed but not verbal content). See Blanck & Rosenthal, Developing Strategies for Decoding "Leaky" Messages: On Learning How and When to Decode Discrepant and Consistent Social Communications, in Development of Nonverbal Behavior in Children 203 (R.S. Feldman ed. 1982); Blanck, Rosenthal, & Vannicelli, Talking to and About Patients: The Therapist's Tone of Voice, in Nonverbal Communication in the Clinical Context 99-143 (P.D. Blanck, R. Buck & R. Rosenthal eds. 1986) [hereinafter Nonverbal Communication]; Blanck & Rosenthal, The Mediation of Interpersonal Expectancy Effects: Counselor's Tone of Voice, 76 J.Educ. Psychology 418 (1984) [hereinafter Mediation]; Blanck, Rosenthal, Vannicelli & Lee, Therapists' Tone of Voice: Descriptive, Psychometric, Interactional, and Competence Analyses, 4 J.Soc. & Clinical Psychology 154 (1986).

\textsuperscript{28} See supra note 23 (references cited therein).

\textsuperscript{29} See Appearance of Justice, supra note 2, at 97-101.

\textsuperscript{30} The content-present channel of communication was expressed via the normal video and audio tapes, and the content-absent channel of communication was expressed via tapes altered experimentally to show only visual and only tone of voice.

when responding to improper attorney behavior a judge might show more directive or controlling behaviors; conversely, when dealing with child witnesses a judge might show more caring and patient behaviors.

In an analogous line of study, we examined the nonverbal global behaviors or general demeanor of psychotherapists when talking to and about their patients. We found three basic dimensions of behavior in the way therapists interact with their patients. The first dimension of "professionalism" emerges and parallels what earlier researchers have called a "directive mode" of therapeutic interaction. The emphasis of the more professional or directive style of therapy is on the therapist's role in structuring, leading, and advising. In his classic analyses of the therapeutic interaction, Carl Rogers described behavior high on the professional dimension as providing "advice and persuasion," while others have interpreted this style in therapy as influential, directive, and even critical. Not only are therapists who are high on the professional dimension more active in the therapeutic interaction, but they are more likely to inhibit activity on the part of the patient.

A second global dimension of "warmth" in relating to patients emerges. High scores on this dimension embody the qualities of empathy and positive regard in the therapeutic interaction and are characterized by an open-minded and understanding therapeutic style. In relating to patients, the warm therapist focuses on communicating to the patient in a "common sense" manner, with an emphasis on acceptance of the patient's feelings. In contrast to therapists rated high on the professional dimension, "warm" therapists may attempt to create an atmosphere conducive to the patient's self-exploration and development. In our work with psychotherapists, a third dimension that typically emerges is the degree of general anxiety or nervousness in relating to patients.

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35 Dimensions of Psychotherapy, supra note 29, at 110; Rogers, supra note 30, at 97-99.

36 Dimensions of Psychotherapy, supra note 29, at 110.


39 See Nonverbal Communication, supra note 23, at 108-12 (although these dimensions seem to be independent of the professionalism and warmth dimensions, anxiety in relating to patients comprises both the more "critical" aspects of professionalism and the more "uncomfortable" aspects of the dimension of warmth).
Little attention, if any, has been devoted to the empirical study of judges' interpersonal or global behavior. One study that employed participant observation methods examined the differences in the working styles, and by implication, "interpersonal" roles of nine criminal court judges. These researchers developed a typology of six major judicial behavioral roles: Political Adventurer-Careerist, Intellectual-Scholar, Routineer-Hack, Judicial Pensioner, Hatchet-Man, and Tyrant-Showboat-Benevolent Despot. Particularly relevant to our interests are these researchers' behaviorally-based descriptions of these judges' different roles. For example, in the "Tyrant-Showboat-Benevolent Despot" style the judge "completely dominates the proceedings and manipulates them toward his own ends.... He manipulates juries through smiles, smirks, and unrecorded off-the-cuff comments which may tend to discredit a witness or a defendant's testimony during a trial." Unlike this earlier work, our research assesses judges' behavior from videotapes of actual criminal trials, utilizing groups of individuals who are not connected with the trials, assigned randomly to rate the judges' behavior. Ratings of the judges' behavior were made on ten different scales: (1) professional--not professional, (2) warm--not warm, (3) open-minded--not open-minded, (4) honest--not honest, (5) dominant--not dominant, (6) competent--not competent, (7) dogmatic--not dogmatic, (8) wise--not wise, (9) hostile--not hostile, and (10) anxious--not anxious.

These ten scales were selected for several reasons. First, many of these scales have been employed in a variety of studies of verbal and nonverbal communication and have been shown to be related to the transmission of beliefs and attitudes. Second, various social science studies

42 Smith & Blumberg, supra note 37, at 105. An analogous line of study demonstrates how global dimensions of verbal and nonverbal behavior could affect trial outcomes. See, e.g., Edinger & Patterson, Nonverbal Involvement and Social Control, 93 Psychological Bull. 30, 38 (1983); Erickson, Lind, Johnson & O'Barr, Speech Style and Impression Formation in a Court Setting: The Effects of "Powerful" and "Powerless" Speech, 14 J.Exptl.Soc. Psychology 266 (1978); Lind & O'Barr, The Social Significance of Speech in the Courtroom, In Language and Social Psychology 66 (H. Giles & R.N. St. Clair eds. 1979); Scherer, Voice and Speech Correlates of Perceived Social Influence in Simulated Juries, in Language and Social Psychology 88-120 (H. Giles & R.N. St. Clair eds. 1979); see also Sigal, Braden-Maguire, Hayden & Moseley, The Effect of Presentation Style and Sex of Lawyer on Jury Decision Making Behavior, 22 Psychology, Q.J. Hum.Behav. 13, 14-15 (1985) (discussing how mock jurors, who viewed a simulated courtroom trial in which defense attorneys adopted either an assertive, aggressive, or passive behavioral style, found that the defense attorneys' assertive and aggressive courtroom style tended to result in significantly more "not guilty" verdicts than the passive style).
43 See Appearance of Justice, supra note 2, at 117-18 & App. C. Ten videotaped sections of the California Pattern Criminal Misdemeanor Jury Instructions, read by the judges to their juries, were rated. These sections were chosen to reflect the beginning, middle, and ending segments of the instructions, and all of these sections were rated for all 34 trials.
have found these scales useful in describing the communication of affect and interpersonal style.\textsuperscript{45} Third, these scales reflect the dimensions on which judges' behavior has been described by the courts in case law requiring judges to be fair and impartial, and on which judges and practitioners base their own observations of the importance of communicative behavior in the courtroom.\textsuperscript{46}

In describing and delineating judges' global dimensions of behavior, we employed a principal components analysis.\textsuperscript{47} Principal components analysis is a practical way to reduce the number of scales or variables required to describe behavior. This type of analysis is particularly applicable to studies of complex courtroom behavior in which the goal is to generate hypotheses and descriptions of behavior in the spirit of exploratory data analysis. After performing the principal components analyses, we "rotated" the data matrix to maximize the ability to interpret resulting "factors" or "components," which are then used to create composite "supervariables" or, as we term them, the "global dimensions" of judges' behavior.\textsuperscript{48}

2. Descriptive Analyses of Trial Judges' Behavior: Results and Discussion

Here, we present our empirically-based description of the participating judges' global dimensions of behavior. These analyses are summarized in Table 1 below:

\textsuperscript{45} See Nonverbal Communication, supra note 23, at 103.
\textsuperscript{46} For example, the National Conference of State Trial Judges describes the essential qualities of a good judge to include graciousness, moral courage, reputation for fairness, mercy, patience, ability to communicate, decisiveness, innovation, open-mindedness, brevity, dignity, honesty, and integrity. See Nat'l Conf. of State Trial Judges, ABA, The Judge's Book 31-38 (1989) [hereinafter Judges' Book]; see also Appearance of Justice, supra note 2, at 95-96.
\textsuperscript{47} This is a form of factor analysis. See R. Rosenthal & R.L. Rosnow, Essentials of Behavioral Research: Methods and Data Analysis 414-19 (1984).
\textsuperscript{48} See R. Rosenthal & R.L. Rosnow, supra note 43, at 415-19. In our analyses, the mean of the raters' ten ratings of the judges' behaviors were intercorrelated, separately for the content-present and for the content-absent channels, and a principal components analysis with varimax rotation was computed for each of these correlation matrices. See also infra notes 49-52 and accompanying text; cf. Nonverbal Communication, supra note 23, at 110.
Table 1 shows that for both the content-present and content-absent channels of communication, the principal components analysis yields four interpretable components or basic global dimensions of the judges' behavior, namely: judicial, directive, confident, and warm.

The following conclusions may be drawn about the four global dimensions on which judges may behave (or "appear" to behave) toward their juries: (1) A judge high on the judicial dimension is rated as more professional, wise, competent, and honest; (2) A judge high on the directive dimension is rated as more dogmatic and dominant; (3) A judge high on the confident dimension is rated as less anxious and less hostile; and (4) A judge high on the warm dimension is rated as

<table>
<thead>
<tr>
<th>Variable</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
<td>.779&lt;sup&gt;†&lt;/sup&gt;</td>
<td>.267</td>
<td>-.260</td>
<td>-.156</td>
</tr>
<tr>
<td>Wise</td>
<td>.589</td>
<td>.503</td>
<td>.063</td>
<td>.281</td>
</tr>
<tr>
<td>Competent</td>
<td>.743</td>
<td>.446</td>
<td>-.196</td>
<td>.011</td>
</tr>
<tr>
<td>Honest</td>
<td>.808</td>
<td>.023</td>
<td>-.162</td>
<td>.206</td>
</tr>
<tr>
<td>Dogmatic</td>
<td>-.025</td>
<td>.870</td>
<td>.119</td>
<td>-.055</td>
</tr>
<tr>
<td>Dominant</td>
<td>.255</td>
<td>.798</td>
<td>.064</td>
<td>-.054</td>
</tr>
<tr>
<td>Not Anxious</td>
<td>-.0146</td>
<td>-.015</td>
<td>.911</td>
<td>.060</td>
</tr>
<tr>
<td>Not Hostile</td>
<td>-.205</td>
<td>.267</td>
<td>.782</td>
<td>-.264</td>
</tr>
<tr>
<td>Warm</td>
<td>.153</td>
<td>-.020</td>
<td>-.095</td>
<td>.936</td>
</tr>
<tr>
<td>Open-Minded</td>
<td>.726</td>
<td>-.232</td>
<td>-.056</td>
<td>.413</td>
</tr>
</tbody>
</table>

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<sup>†</sup> Loadings serving to define each of the component-based global variables are underlined.
warmer and more open-minded.49

Interestingly, it seems that these judges' four global dimensions are readily assessed from either the content-present or the content-absent channels of communication.50 Overall, the four empirically-derived dimensions of judges' behavior, analyzed separately for the content-present and content-absent channels, parallel earlier descriptions of the basic dimensions (or factor structure) of interpersonal communication.51

To develop a single interpretable solution across the content-present and content-absent channels of behavior that could be employed practically in subsequent analyses, we performed a cluster analysis.52 As would be expected, the cluster analysis yielded the same four global dimensions of judges' behavior: judicial, directive, confident, and warm. The implications of this analysis are summarized in Table 2.

49 The only difference between the content-present and the content-absent conditions is that in the content-absent condition the "open-minded" scale loads more highly on the warm than on the judicial dimension. This factor structure parallels our earlier findings and descriptions of behavior for psychotherapists, business executives, and children. See Nonverbal Communication, supra note 23, at 108-12.

50 This may result from the constrained nature of the judges' behavior when presenting pattern jury instructions. See supra note 22. We are presently exploring the relationship between the content-present and the content-absent channels during other portions of the trial process.

51 See Wish, Dimensions of Dyadic Communication, in Nonverbal Communication 371-85 (S. Weitz ed. 1979) (showing that our findings are consistent with a series of earlier studies that revealed five basic dimensions of interpersonal communication, interpreted as (1) task-orientation, (2) formality, (3) intensity, (4) dominance, and (5) cooperativeness).

52 Cluster analysis is a method for grouping complex sets of variables, such as those described above. See R. Rosenthal & R.L. Rosnow, supra note 43, at 424-25. Our cluster analysis is based on the "de-meaned" ratings or scores—that is, we standardized the scores by subtracting the group mean from each raw channel score, then aggregating across the content-present and the content-absent channels. To form a meaningful cluster or "global dimension," the median intra-correlation of the group needs to be substantially greater than the median inter-correlation of the group. See R. Rosenthal & R.L. Rosnow, supra note 43, at 424-25.
### TABLE 2

Summary of Four Composite Global Dimensions of Trial Judges' Behavior

<table>
<thead>
<tr>
<th>Global Dimension</th>
<th>Ratings Comprising Global Dimension</th>
<th>Behavioral Examples of Global Dimension</th>
<th>Appearance of Judges' Behavior Associated with Global Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Legally-Based</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Judicial</strong></td>
<td>Professional</td>
<td>Dignified</td>
<td>Traditional Judge-Like Quality</td>
</tr>
<tr>
<td></td>
<td>Wise</td>
<td>Impartial</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Competent</td>
<td>Fair</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Honest</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Directive</strong></td>
<td>Dogmatic</td>
<td>Advising</td>
<td>Task-Oriented and Managerial Approach</td>
</tr>
<tr>
<td></td>
<td>Dominant</td>
<td>Leading</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Structuring</td>
<td></td>
</tr>
<tr>
<td><strong>Emotionally-Based</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Confident</strong></td>
<td>Not Hostile</td>
<td>Patient</td>
<td>Self-Assured</td>
</tr>
<tr>
<td></td>
<td>Not Anxious</td>
<td>Interested</td>
<td>Presentational Style</td>
</tr>
<tr>
<td><strong>Warm</strong></td>
<td>Warm</td>
<td>Supportive</td>
<td>Human and Empathic Quality</td>
</tr>
<tr>
<td></td>
<td>Open-Minded</td>
<td>Courteous</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Caring</td>
<td></td>
</tr>
</tbody>
</table>

At one level, Table 2 shows that the four global dimensions maybe delineated into those that appear more "legally," "procedurally," or "managerially" oriented--as reflected by the judicial and directive dimensions, and into those that appear more "emotionally-based"--as reflected by the confident and warm global dimensions. This suggestion is supported by our analyses and is consistent with Professor Bales's classic description of the central dimensions of interpersonal behavior in groups. In particular, Professor Bales and his colleagues have demonstrated the importance of an "instrumentally controlled" versus an "emotionally expressive" dimension of individual behavior in group interaction. In Professor Bales's terms, to say that a judge's behavior

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53 Our findings tend to support this hypothesis. The median intra-correlation between the judicial and directive dimensions (averaged over the content-present and the content-absent conditions) is .34 and the same correlation between the confident and warm dimensions is .39, while the median inter-correlation between the judicial and directive dimensions with the confident and warm dimensions is .26. The "legally-based" dimensions of judges' behavior (particularly directive behavior) are also similar to others' case-study descriptions of so-called "managerial judging" techniques. See Resnik, Managerial Judges, 96 Harv. L.Rev. 374, 376-77 (1982). Professor Resnik proposes that judicial management techniques, such as procedural mechanisms judges employ for managing cases and case loads, sometimes may undermine the "traditional" disinterested judicial role. Cf. Flanders, Blind Umpires--A Response to Professor Resnik, 35 Hastings L.J. 505 (1984). We make no such claims about our behaviorally-based dimensions. As discussed in the final part, it may be quite appropriate for judges to display behavior high on each of the global dimensions at different times during the trial process depending on the facts and circumstances of the case. Nevertheless, future study seems warranted to explore the relationship between judges' behavior and their methods of case management.

54 R.F. Bales & S.P. Cohen, SYMLOG: A System for the Multiple Level Observation of Groups, 22, 176-82 (1979) (finding three basic dimensions of interpersonal behavior--(1) dominant vs. submissive, (2) friendly vs. unfriendly, and (3) instrumentally controlled vs. emotionally expressive).
is "instrumentally controlled" means that the judge is task-oriented or takes a procedurally-based approach to decision making; for purposes of our findings--directive in relating to jurors. In line with this suggestion, directive behavior may appear to jurors as "controlled" or lacking in spontaneous feelings or emotion.

In contrast to the legally and procedurally-based dimensions, the judge's behavior on the emotionally-based dimensions (i.e., confident and warm behavior) may appear to jurors as more spontaneous, accepting, and friendly, yet positively assertive. This conclusion also is consistent with Professor Bales's description of individuals' "emotionally-expressive" behavior in groups.

On a more fine-grain level, our cluster analysis supports the delineation of the four individual global dimensions of judge's behavior. Specifically, the findings imply that a judge high on the judicial dimension may appear dignified, thoughtful, and the embodiment of traditional views of the judge's role. The judicial dimension is focused, perhaps in the broadest sense, on the appearance of judicial propriety and fairness. Judges' own intuitive views of the judicial dimension reflect our empirically-based conclusions.

In contrast to the judicial dimension, judges high on the directive dimension may appear more business-like, managerial, or task-oriented. This dimension is consistent with the qualities of the "directive" style of therapeutic interaction described above, in which the therapist structures and leads the proceedings. It is also conceptually similar to the quality of "decisiveness," high scores on which are associated with indispensable characteristics of trial judges: "thoughtful consideration is essential, but indecisiveness is inconsistent with judicial responsibility." On the other hand, the directive dimension seems to fit the behavioral pattern suggested by the role of the judge as "administrator," which is manifested by an emphasis on procedural aspects and a concern for "a clear docket."

The third dimension, confident behavior, may reflect the extent to which the judge appears

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55 The median intra-correlation for the judicial dimension is .61, compared to a median inter-correlation of .23. See supra note 48.
56 See Redish & Marshall, Adjudicatory Independence and the Values of Procedural Due Process, 95 Yale L.J. 455 (1986) (describing values of procedural due process to include appearance of an independent and fair adjudicator); see also Judges' Book, supra note 42, at 33; Appearance of Justice, supra note 2, at 117; Ungs & Bass, supra note 36, at 344-48.
57 See Judges' Book, supra note 42, at 31-38.
58 For the directive dimension, the median intra-correlation is .54 compared to the median inter-correlation of .18. See supra note 48.
60 See Judges' Book, supra note 42, at 31.
61 See Ungs & Bass, supra note 36, at 357; see also H.R. Glick, Supreme Court in State Politics 29 (1971). Directive behavior in the content-absent conditions may reflect a more subtly controlling or forceful communicative style by judges. Cf. Judges' Book, supra note 42, at 34. We are exploring the extent to which a directive nonverbal style alone may, in the extreme, suggest to jurors a judge's beliefs about trial processes in ways that would never appear on a "dry" trial transcript. This is consistent with our suggestion that judges may tend to "leak" certain beliefs to juries through nonverbal messages. See Therapists' Speech, supra note 28 at 4; Appearance of Justice, supra note 2, at 130. Whether and how such subtle messages actually influence the behavior of juries remains an open question. See infra notes 101-01 and accompanying text; see also "Trial by Process? Pretrial Publicity Doesn't Bias Jurors, Panelist Say," 76 A.B.A.J. 31 (Sept. 1990).
emotionally comfortable and patient with others during the trial. Judges themselves recognize the importance of a patient style, noting that "close to impatience is tyranny or despotism," and "t he confident and enlightened judge frames commands in the form of requests, making them in a pleasant way, and is respected." Trial judges high on the confident dimension may be perceived also as relatively more self-assured and open in the way they communicate to trial participants.

The fourth dimension, warm behavior, may reflect the extent to which judges appear to be supportive, courteous, and accepting of trial participants. Warmth may also embody the style of positive regard in relating to others, which has been the focus of the client-centered therapeuticschool and may reflect generally a counseling role of the judge, as compared to the advice and managerial roles embodied in the more legally-oriented dimensions of behavior.

The delineation of the four individual global dimensions may prove heuristically useful for several reasons. First, our analyses have resulted in practical, interpretable, and externally valid dimensions of judges' communicative behavior that are consistent with prior case-oriented and clinically-derived descriptions. Second, each global dimension is derived by maximizing the traditional safeguards associated with precision of measurement and the independence of raters. In the next part, we explore the extent to which the global dimensions of judges'

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62 For the confident dimension, the median intra-correlation is .63 as compared to the median inter-correlation of .29. See supra note 48.
63 Judges' Book, supra note 42, at 34.
64 For the warm dimension the median intra-correlation is .49 versus a median inter-correlation of .17. See supra note 48; cf. Ungs & Baas, supra note 36, at 360 (suggesting a "peacekeeper" role of trial judges).
65 Judges' Book, supra note 42, at 31-33; see also Scherer, supra note 42, at 103 (warm dimension is consistent with a "likability-benevolence" dimension found in research on perceived social influence on juries). See generally C.E. Osgood, G.J. Suci & P.H. Tannenbaum, The Measurement of Meaning (1957) (warm dimension is consistent with an "evaluative" dimension of behavior found in these classic early studies).
66 Each of the four cluster-based global dimensions of judges' behavior is defined as the mean of the variables included in that cluster with the sign of the loading taken into account (because the variances of these variables were homogeneous, standardizing was not employed prior to computing the means of the ratings). For example, the judicial dimension is defined as the mean rating of professional, wise, competent, and honest. In this way, the ten initial ratings of judges' behavior are reduced to the four basic global dimensions and could be practically employed in subsequent analyses. Cf. J.M. Conley & W.M. O'Barr, Rules Versus Relationships: The Ethography of Legal Discourse 82-83 (1990) (identifying by anthropological analyses five "roles" of the trial judge, including: "the strict adherent to the law," "the lawmaker," "the authoritative judge," "the mediator," "the proceduralist"); Flango, Wenner & Wenner, The Concept of Judicial Role: A Methodological Note, 19 Am.J.Pol.Sci. 277, 284 (1975) (suggesting four ideal role types of judges' behavior, including "law applier", "law extender", "mediator", and "policy maker").
67 The four global dimensions help to improve the "psychometric" or measurable properties associated with the study of judges' behavior. This is because the four dimensions are both more interpretable and reliable, as they are based on a greater number of observations and ratings of behavior. To determine the reliability and utility (generalizability) of the global dimensions, across the content-present and the content-absent conditions, intraclass correlations were computed. See Rosenthal, Judgment Studies, supra note 40, at 292-99. Briefly, these results are as follows. The simple reliability of a single rater on the four dimensions ranged from .02 to .19. Thus, single raters vary considerably in their assessments of the behavior of these judges, suggesting that social scientists and legal scholars who wish to assess global dimensions would be well-advised to employ either several raters, longer clips, or both, to achieve an acceptable level of reliability. The simple reliability for a single rater extrapolated to a full 30-minute jury charge ranged from .20 to .70 (based on three one-minute viewings extrapolated to 30 minutes), suggesting that single raters should be able to reliably assess the global dimensions over the course of an entire jury charge. The effective reliability of the mean of the ratings made by the raters across all 34 trials ranged from .61 to .95 and extrapolated to a full jury charge ranged from .95 to .99. Large numbers of raters should reliably agree...
behavior may predict, or be predicted by, other more easily coded and monitored nonverbal behaviors of these same judges.

B. Analysis II: Predictive Aspects of Trial Judges' Behavior

1. Background and Method of Study

In this set of analyses, we examine the degree to which other more "micro" nonverbal behaviors of trial judges, such as eye contact, postural attention, and head nods, serve as important indicators of their four global dimensions of behavior. If micro behaviors show such predictive validity, they would suggest methodologically effective and economical shortcuts to researchers and practitioners interested in studying and assessing judges' global behaviors during the "live" trial process. Even moderate relationships between the more readily quantifiable micro behaviors and the more generalized global behaviors could be of important substantive and methodological value to social scientists, legal researchers, and legal practitioners.

In an analogous line of research, we have examined the predictive value of micro behaviors in the psychotherapeutic context. This research established the basic predictive validity of nonverbal behaviors while talking about patients as predictors of nonverbal behaviors while talking to patients. The findings demonstrate that therapists' nonverbal style in relating to patients could be predicted from observing how therapists talked about those same patients.

The predictive value of micro behaviors has been studied in the courtroom context. In one study, researchers identified the micro behaviors that subjects (and presumably, jurors) might associate with witnesses' attempts at deception. In that study, the raters of videotapes associated less eye contact, more backward leans, trunk swivel, leg movement, self-touching, gesturing, and speech about the global dimensions of judges' behavior when they view a full charge. For a review of the psychometric properties of the analysis of judges' behavior, see Blanck, Rosenthal, Hart & Bernieri, supra note 20. Nevertheless, brief segments of judges' behavior cannot be naively extrapolated to full jury charges or to other parts of trials. Cf. Gertz & Talarico, Problems of Reliability and Validity in Criminal Justice Research, 5 J. Crim. Just. 217 (1977). Although the present findings suggest that, under certain conditions, judges' global dimensions may be measured reliably even by brief segments of the trial process, more research is needed before any conclusive statements can be made about the generalizability of our analyses to other parts of the trial or to other judges.

68 See infra notes 93-100.
70 See Nonverbal Communication, supra note 23, at 131-37. Our results show that therapists who spoke about their patients (1) in a dominant and optimistic manner talked to those same patients in a professionally competent manner, (2) in a cold autocratic manner tended to speak to those same patients in a cold professional manner, and (3) with warmth and concern tended to speak to those patients with warmth and respect.
errors with deceptive communications. Another study examined the effects of eye contact, self-touching (nervous, fidgety behavior), and speech errors on mock jurors' perceptions of a defendant's credibility and guilt. The defendant's eye contact, self-touching, and verbal nonfluencies were varied across three distinct levels: high, moderate, and low anxiety. For example, in the "high anxiety" condition, defendants displayed low levels of eye contact, high levels of self-touching, and high levels of verbal nonfluencies such as stuttering and using words like "um" and "uh." These researchers found that defendants manifesting "high micro behavior" anxiety received relatively lower credibility ratings and the highest percentage of guilty verdicts of any of the conditions.

Other studies of courtroom processes have focused solely on the frequency of a trial judge's looking behavior, gaze, or eye contact, as a factor influencing juries' decisionmaking. In one such exploratory study, researchers found a significant positive relationship between the rate of gaze by the trial judge at the defendant and the fine received if the defendant was found guilty. Similarly, mock jurors tend to perceive witnesses as less credible when the witnesses fail to look toward their questioner, a mock lawyer. Ultimately, the defendant for whom they testify is rated as more likely to be guilty.

In the present analyses, we employ as predictors the judges' micro behaviors and as criterion variables the four global dimensions. The judges' microbehaviors assessed are seven discretely coded actions that have been employed regularly in studies of nonverbal behavior, including: (1) amount of eye contact with the jury; (2) number of smiles; (3) number of head nods or shaking head movements; (4) number of significant hand movements; (5) number of forward leans toward or away from the jury; (6) number of significant changes in posture, body position, or body movements (with fewer shifts defined as "postural attention"); and (7) number of self-touching behaviors, such as hand to body scratching or chin rubbing when instructing the jury.

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73 Pryor and Leone, 1981, supra note 68, at 19 (these researchers speculate further that certain pattern jury instructions may accentuate jurors' focus on witness or defendant micro behaviors).
77 Two raters, not employed in rating the global behaviors, independently coded the tapes for the micro variables. The simple reliability of a single rater ranged from .26 to .99, with a median reliability of .71. Thus, single raters were very consistent in their rating of the micro behaviors. The effective reliability of the mean of the two raters' ratings for the micro behaviors ranged from .41 to .99, with the median effective reliability of .72. When we examined the relationship among the micro behaviors themselves, the resulting median correlation was .26, with the absolute value median correlation of .35, p < .05. These intercorrelations provide strong preliminary evidence that judges' micro behaviors, like their global behaviors, may predict a more general constellation or pattern of behavior. To test this hypothesis, we performed a principal components analysis on the micro behaviors and the analysis yielded two interpretable components after rotation. A first component of "engaged" micro behaviors emerged with judges scoring high on this dimension displaying more eye contact, more postural attention, and less self-touching.
We employ two types of analyses to address the question of whether the micro behaviors are predictive of judges' global dimensions: simple correlations and multiple regression. These analyses are discussed next.

2. Predicting Trial Judges' Global Behavior from Their Micro Behaviors: Results and Discussion

In the first set of analyses, we correlate each of the four global dimensions—judicial, directive, confident, and warm—with the seven microbehaviors separately for the content-present and the content-absent communicative channels. The purpose of examining the simple correlations is to establish the basic validity of the micro behaviors as predictors of judges' global behavior. The results for the simple correlations are presented in Table 3 below.

A second component of "emotional" micro behaviors emerged with judges scoring high on this dimension displaying more smiles, head nods, hand movements, and forward leans. These constellations parallel conceptually our findings for the "legal" and "emotional" global dimensions of judges' behavior. Statistical significance is indexed here by a probability value that an observation would have been found if, in the population from which we had sampled, the true correlation were zero. We present probability values (p) of .10 or smaller because these values are useful in assessing the types of variables under study here. See Appearance of Justice, supra note 2, at 119-20 n. 98. For a discussion of the correlation coefficient, see supra note 44. The correlation coefficient (r) can take on values between -1.00 and +1.00. A value of -1.00 means that there is a perfect negative relationship, a value of +1.00 means there is a perfect positive relationship and a value of .00 means that there is no linear relationship between the two variables. Correlational analyses describe the predictive relationship between two variables and do not isolate the "causes" and "effects" of that relationship.
Table 3 provides strong evidence that judges' micro behaviors can be used to predict their global behavior. High scores on the judicial dimension are predicted by more eye contact, head nods, and postural attention in the content-present condition, while fewer smiles predict more judicial behavior in the content-absent conditions. Thus, at least overtly, judicial behavior is predicted by more engaged and serious micro nonverbal behaviors. However, in the content-absent condition, the judicial dimension is generally predicted by less engaged micro behaviors, such as less eye contact. The difference between the correlations in the content-present and the content-absent conditions is statistically significant. This result suggests that the judicial dimension may be more directly assessed from the content and the behavior of judges, rather than from the judges' nonverbal micro behaviors alone.

Table 3 shows that high scores on the directive dimension are predicted by more eye contact, smiles, postural attention, and head nods in the content-present condition, while fewer smiles predict more directive behavior in the content-absent conditions. The difference between the correlations in the content-present and the content-absent conditions is statistically significant. This result suggests that the directive dimension may be more directly assessed from the content and the behavior of judges, rather than from the judges' nonverbal micro behaviors alone.

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**Mean correlations separately for Content-Present and Content-Absent conditions.**

**Difference between mean correlations for Content-Present and Content-Absent conditions.**

The judges' micro behaviors were evaluated by using tapes without the audio component.

For this predictive relationship across the content-present conditions, the mean effect size (r) of .32 is significant at p < .10, and is equivalent in practical magnitude to increasing the accuracy of prediction of behavior from 34% to 66% by means of the binomial effect-size display (BESD). See Rosenthal & Rubin, A Simple, General Purpose Display of Magnitude of Experimental Effect, 74 J.Educ. Psychology 166 (1982). The use of the BESD to display the increase in the predictive power of the micro behaviors communicates the real-world importance and practical validity of employing ratings of micro behaviors.
smiles, head nods, and forward leans in the content-present condition, and by fewer hand movements in the content-absent condition. Consistent with the findings for the judicial dimension, more engaged nonverbal behaviors seem to predict the judges' directive behavior in the content-present condition better than in the content-absent condition.\(^{81}\)

Table 3 also shows that high scores on the confident dimension are predicted by more eye contact and postural attention in the content-present condition but are not predicted by any of the micro behaviors in the content-absent condition. Similarly, high scores on the warm dimension are predicted by more eye contact, smiles, and postural attention and by less self-touching in the content-present condition, and by less postural attention, that is, a more relaxed body position, in the purely nonverbal content-absent condition.

Several preliminary conclusions can be drawn from the results of the simple correlations. First, the degree of eye contact between the judge and the jury appears to be an especially effective predictor of the global dimensions in the content-present channels.\(^{82}\) This is an interesting finding given the large body of research showing the important effects of eye contact and gazing behavior on social influence.\(^{83}\) As suggested above, increased levels of eye contact are indicative of more engaged or involved behavior, of efforts to maintain dominance or to persuade others, and of more truthful, sincere, or credible behavior.\(^{84}\) One direction for future study will be to explore the relationship between judges' eye contact (with different trial participants) and the trial participants' perceptions of the judges' "appearance of justice."

Second, the results support our suggestion that the micro behavioral correlates most associated with the more legally-based dimensions—judicial and directive—include more engaged nonverbal behaviors, such as more eye contact and head nods. Again, this result suggests that a task-oriented or managerial style by judges is reflected alone by more engaged micro behaviors.

Third, the results suggest that for the warm dimension, the microbehaviors most often associated with judges' warm and relaxed demeanor include less postural attention (e.g., as reflected by less body stiffness) and less self-touching (e.g., as reflected by less nervous chin rubbing).\(^{85}\) Together, these simple correlations provide preliminary evidence for the hypothesis that judges' micro behaviors alone can be used to predict significantly, and with practical benefit, the global

\(^{81}\) The difference between the correlations for the content-present and the content-absent conditions of .36 is significant at \(p < .05\).

\(^{82}\) For this predictive relationship across the content-present conditions, the median effect size \((r)\) of .48 is significant at \(p < .01\), and is equivalent in practical magnitude to increasing the accuracy of prediction from 26% to 74% by means of the BESD. Rosenthal & Rubin, supra note 76, at 167.


\(^{84}\) See M.L. Knapp, supra note 65, at 294-321.

\(^{85}\) Cf. Bayes, supra note 33, at 335 (frequent smiling and positive comments about others are the best behavioral cues predicting interpersonal warmth); D'Augelli, Nonverbal Behavior of Helpers in Initial Helping Interactions, 21 J. Counseling Psychology 360 (1974) (smiling and nodding in helping interactions are related significantly to perceptions of warmth and empathic understanding of the helper).
dimensions of judges' behavior.\textsuperscript{86}

After establishing the basic validity of micro behaviors as predictors of global dimensions, we wanted to learn how much better we might do employing multiple regression analyses rather than just simple correlation. From a practical point of view, the regression analyses enable a more detailed assessment of the relationship between the set of micro behaviors with each global dimension.\textsuperscript{87} Consistent with our analyses above, we employed the four global dimensions as criterion variables, assessing their predictive relationship with the set of micro behaviors separately for the content-present and the content-absent channels of communication.

The results of the regressions are presented in Figure 1 below.\textsuperscript{88}

**FIGURE 1**

Predictive Aspects of Trial Judges' Behavior: Predicting Judges' Global Behavior from Their Micro Behaviors--Multiple Regressions

<table>
<thead>
<tr>
<th></th>
<th>Legally-Based Judicial Dimension</th>
<th>Emotionally-Based Confident Dimension</th>
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<tbody>
<tr>
<td></td>
<td>Eye Contact (.59***)</td>
<td>Hand Movements (.47***</td>
</tr>
<tr>
<td></td>
<td>Head Nods (.66****)</td>
<td>Forward Leans (.43**)</td>
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<tr>
<td>CONTENT-PRESENT</td>
<td>Smiles (-.38**)</td>
<td>Postural Attention (.26*)</td>
</tr>
<tr>
<td></td>
<td>Forward Leans (.37**)</td>
<td>Hand Movements (-.29**)</td>
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<tr>
<td></td>
<td>Emotionally-Based Confident Dimension</td>
<td>Smiles (-.29**</td>
</tr>
<tr>
<td></td>
<td>Eye Contact (.47**)</td>
<td>Postural Attention (.26*)</td>
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</tbody>
</table>

\textsuperscript{86} The findings are particularly encouraging given the brief length of the global video clips and that the micro behaviors were rated by a different group of raters. See Schaffer, supra note 27, at 677.

\textsuperscript{87} For a review of multiple regression techniques, see J. Cohen & P. Cohen, Applied Multiple Regression/Correlation Analyses for the Behavioral Sciences 7 (2d ed. 1983) (explaining that multiple regression analyses describe the relationships that characterize a complex set of variables in which a single criterion variable is predicted from scores on two or more predictor variables).

\textsuperscript{88} Figure 1 displays the eight dependent "criterion" variables (the four global dimensions of judges' behavior for the content-present and content-absent channels) in the boxes and the significant micro predictors on the perimeter of each box. This form of display illustrates in practical terms the relationship between the global dimensions and the micro behaviors. See Nonverbal Communication, supra note 23, at 136; Rosenthal, Blanck, & Vannicelli, Speaking To and About Patients: Predicting Therapists' Tone of Voice, 52 J. Consulting & Clinical Psychology 679 (1984).

\textsuperscript{†} The communication channels for a particular global dimension as criterion variables are enclosed in the boxes and the seven micro predictor variables, and their effect size (partial) correlation *, are arrayed around the perimeter. *p < .10; **p < .05; ***p < .01; ****p < .001.
As Figure 1 illustrates, the results for the legally-based dimensions can be summarized as follows: (1) the judicial dimension is predicted by the micro constellation of more eye contact, head nods, hand movements, and fewer forward leans in the content-present condition, and by less eye contact, and fewer smiles and forward leans in the content-absent condition; and (2) the directive dimension is predicted by more eye contact, head nods, smiles, and forward leans in the content-present condition, and by more postural attention and fewer hand movements in the content-absent condition.

The results of the regressions for the two "emotionally-based" dimensionsshow: (1) the confident dimension is predicted by more eye contact, hand movements, and postural attention in the content-present condition, and is predicted by more postural attention in the content-absent condition; and (2) the warm dimension is predicted by more eye contact, smiles, and less self-touching in the content-present condition, and is predicted by less postural attention in the content-absent condition.

Our findings, showing significant predictive relationships, suggest that the analysis of judges' micro behavior can be of heuristic value to those interested in the practical description and assessment of judges' global behavior. This is true even when the study involves a relatively small sample of judges, all of whom knew that they were being videotaped and assessed.

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89 In the presentation of our results, the Multiple R (R) represents the relationship between the global dimensions and the set of predictor micro behaviors. R takes on values only between 0 and 1, with the former indicating no relationship and the latter indicating a perfect relationship between the variables. The F and t tests describe the level of confidence that the linear relationship between the set of micro behaviors and the global dimensions is not zero in the population. See J. Cohen & P. Cohen, supra note 83, at 78, 104 (df refers to the "degrees of freedom" required for statistical significance testing). For the judicial dimension in the content-present condition, $R = .848$, $F = 25.93$, df (4,29), p < .0001.

80 $R = .731$, $F = 13.03$, df (3,30), p < .0005.


82 $R = .387$, $F = 3.45$, df (2,31), p < .05.

83 $R = .649$, $F = 5.97$, df (3,30), p < .005.

84 $R = .257$, $F = 2.91$, df (1,32), p < .10.

85 $R = .794$, $F = 19.72$, df (3,30), p < .0005.

86 $R = .282$, $F = 4.16$, df (1,32), p < .10

87 For example, our framework may prove useful in the more fine-grained analysis of claims on appeal of judicial bias in the jury selection process, or in the more general training of judges and trial counsel. See infra notes 106-12 and accompanying text.
by a group of naive raters.\textsuperscript{98} Because of the serious logistical and ethical problems associated with studying and videotaping actual trials to assess judges' behavior,\textsuperscript{99} our findings suggest that researchers could use the more easily coded and unobtrusively collected microbehaviors as an index of judges' global behavior. Thus, the theoretical framework may prove useful and be practically applied in "on-line" training or educational programs for judges who are interested in the analysis of courtroom communication.\textsuperscript{100}

The simple correlation and multiple regression analyses, taken together, further suggest that, with additional study, micro behaviors may prove practically and economically useful for describing and predicting the general "appearance" of the judge during the trial.\textsuperscript{101} Thus, the degree of eye contact between the judge and jury alone, or the judge's degree of postural attention in listening to testifying witnesses, may be particularly good indicators of the appearance to the jury of a judge's engagement or interest during the trial.\textsuperscript{102}

Finally, the present findings are consistent with a series of studies showing that individuals may "leak" through nonverbal channels certain emotions or beliefs about social interaction.\textsuperscript{103} The findings suggest that judges' global and micro behaviors alone might "leak" to the trial participants the judges' views about the trial process.

\textbf{IV. GENERAL CONCLUSIONS AND IMPLICATIONS}

This article has set forth a preliminary framework for describing and documenting trial judges' behavior. It has not been our intention to suggest that there is a bright-line method for detecting or measuring the legally permissible limits of judges' behavior, for example, separating a judge's verbal and nonverbal behaviors that are legally appropriate from those that may unduly


\textsuperscript{100} See infra notes 106-09.

\textsuperscript{101} We are conducting other analyses to examine the relationship between the set of micro behaviors and the set of global dimensions, employing canonical correlation analysis. From a practical point of view, the canonical correlation analyses will help describe the overall relationship between the sets of micro and global behaviors in the different channels of communication.

\textsuperscript{102} It is important to point out that the analyses here do not address how judges' global and micro behaviors are related to the circumstances and individuals involved in a particular trial. Rather, the analyses here yield central dimensions on which any judge would show some high and some low scores at different points in the trial process and in the different channels of communication. Future studies, employing large numbers of judges, are needed also to explore the extent to which particular judges display primarily one type of global or micro behavioral style.

influence a jury. Nor has it been our intention to suggest that the judge is required to be a "stoneface," showing no emotion or reaction to events in the courtroom. Rather, our more modest goal has been to present a method to aid in the assessment and description of judges' actual behavior.

A. Implications For Courts, Judges, Practitioners, and Social Scientists

The framework for studying judges' behavior presented in this article raises theoretical and practical issues for individuals affected by the interpersonal dynamics of the trial process. Appellate courts have grappled with these issues in addressing the interpersonal dynamics of courtroom behavior by attempting to describe the effect and propriety of judges' verbal and nonverbal behaviors during the trial. In fact, appellate courts regularly consider the "emphatic or overbearing" nature of a judge's verbal and nonverbal behavior as a measure of improper judicial influence.

As the tendency to videotape trials continues to rise, the framework presented here may become increasingly useful to courts and to practitioners in the assessment of judges' and of other trial participants' behavior. Moreover, it may become apparent that many important verbal and nonverbal behaviors of judges' and trial participants not recorded by the "cold" court transcript or written trial record can be preserved and summarized by videotape analyses, making it possible for courts or counsel to more adequately describe these behaviors for appellate review.

Judges as a community of professionals are interested in the issues discussed here and judicial training programs exist across the country, teaching judges the importance of communication behavior and style in the courtroom. Some courses offer judges the opportunity to conduct a judicial proceeding before a video camera. The recording is then played back to the judges

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106 We stress again that the framework presented in this article is a first attempt to more systematically and economically assess courtroom behavior as an alternative to the more expensive and cumbersome process of videotaping. Moreover, although our emphasis is solely on the study of behavior, we still view the "strength of the evidence" and quality of trial presentation to be of paramount importance in determining trial outcome. We are presently exploring how behavioral, procedural and evidentiary factors influence trial outcome. See Blanck, Hart & Rosenthal, infra notes 139-40.
107 See Appearance of Justice, supra note 2, at 95-96 & n. 25. To give one example, an appellate court reversed a burglary conviction when the trial judge, "hearing the defendant's brother testify that the defendant was at home watching television when the alleged burglary occurred," without saying a word, "placed his hands to the sides of his head, shook his head negatively, and leaned back, swiveling in his chair 180 degrees" away from the jury. See id. at 98 (citing State v. Barron, 465 S.W.2d 523, 527 (Mo.1971)).
110 Off the Record, supra note 2, at 38.
and instructors for comments about the strengths and weaknesses of the judges' communicative skills. Other programs for new judges emphasize the trial judge's role as a "teacher," focusing on the ability to communicate clearly and fairly. We hope that the research presented here may aid courts and judges to evaluate more systematically the qualities of their behavior and guide the future study of judges' behavior in the courtroom.

Legal practitioners may also apply our basic framework to aid in the analysis of courtroom behavior in a systematic and economical fashion. For example, practitioners may employ our rating system of micro behavior in the assessment of a particular judge's global communicative style, either assessed during a jury or bench trial. This approach might be helpful in the preparation of a case before a particular judge. Similarly, this approach may prove useful in the area of jury selection, particularly to the extent that some jurors may be relatively more influenced by some judges' behavioral or "working" styles more than by others. Moreover, practitioners may be able to enhance the working communicative "match" between judges and jurors. Lastly, our approach might help in the selection and preparation of witnesses at trial, at least in terms of enhancing the effectiveness and clarity of their communication or presentational style.

Legal scholars are similarly interested in the impact of judges' behavior on courtroom fairness. The American Bar Association's recently adopted amendments to the Model Code of Judicial Conduct (1990) specifically include a new canon that emphasizes the need for the appearance of fairness and justice in the courtroom. The commentary to Canon 3(B)(5) states: A judge must perform judicial duties impartially and fairly. A judge who manifests bias on any basis in a proceeding impairs the fairness of the proceeding and brings the judiciary into disrepute. Facial expression and body language in addition to oral communication, can give to parties or lawyers

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111 See Appearance of Justice, supra note 2, at n. 179-80; see generally Judge's Book, supra note 42; Bias in the Courtroom: A Four-Part Program for Judges and Other Judicial Personnel (1989) (videotape and written materials developed by the A.B.A.).
113 We have also just begun to explore conceptions of judges' behavior in other cultures with different procedural and substantive laws. Blanck, A Comparative Study of the Appearance of Justice: The American Versus the Continental System (manuscript submitted for Old Gold Fellowship, University of Iowa 1990). This comparative research builds on our studies of American trial judges' behavior by exploring how cultural norms may impact on trial participants' perceptions of justice, cf. Redish & Marshall, supra note 52; David, The Different Conceptions of the Law, 1 Int'l Encyclopedia Comp.L. 3-13 (R. David ed. 1975).
114 As our colleague Professor Richard Matasar has suggested, it might be expected that our approach would be especially fruitful in the study of judges' behavior in bench trials.
115 See Appearance of Justice, supra note 2, at 146-47.
116 For example, our framework may aid in jurors' comprehension of judges' instructions or to sensitize jurors to the effects of judges, counsel, or witnesses' communicative bias as reflected in their subtle, nonverbal behaviors at trial.
117 Section 3(B)(5) states: A judge shall perform judicial duties without bias or prejudice. A judge shall not, in the performance of judicial duties, by words or conduct manifest bias or prejudice based upon race, sex, religion, national origin, disability, age, sexual orientation or socioeconomic status, and shall not permit staff, court officials and others subject to the judge's direction and control to do so. A.B.A. Model Code of Jud. Conduct 9-10 (August 1990).
in the proceeding, jurors, the media and others an appearance of judicial bias. A judge must be alert to avoid behavior that may be perceived as prejudicial.

Our exploratory work, along with other more descriptive and clinically-oriented assessments of judges' behavior and conduct, may help to alert and sensitize judges and other trial participants to how fairness and bias, expressed verbally and nonverbally, may be manifested and studied in the "live" courtroom.\textsuperscript{118}

For social scientists, the present results highlight the richness and complexity of the study of judges' behavior.\textsuperscript{119} More detailed assessments of behavior in the courtroom need to be conducted with different trial participants, jurors, lawyers, and witnesses, as well as with a larger number of judges, at different points in the trial process. These strategies might provide a more complete picture of the impact of judges' communicative behavior on the appearance of fairness in the courtroom.\textsuperscript{120} As suggested above, future analyses are needed also to test the extent to which judges' influence on the jury decision-making process, as conveyed via global and micro behaviors, may depend on the jurors' own ability to interpret the verbal and nonverbal behaviors of others.\textsuperscript{121} Whether jurors' skill at interpreting judges' behavior actually affects their decisionmaking is an interesting question to which we are now beginning to turn and which is highlighted in Section B(1) immediately below.\textsuperscript{122}

For each of these groups--courts, judges, legal practitioners, scholars, and social scientists--prior research and more clinically-oriented observations by the legal community suggest a strong relationship between judges' global and micro behaviors and the appearance of fairness.\textsuperscript{123} Yet, in spite of widespread appreciation of this issue by these groups, there has been no attempt to describe or define systematically the behavioral correlates of judges' actual behavior. One reason for this may be the lack of a framework for specifying judges' behavior and the complexity of

\textsuperscript{118} For a review of judicial conduct and gender bias in the courts, see generally L.H. Schafran, Promoting Gender Fairness Through Judicial Education: A Guide to the Issues and Resources (1989).


\textsuperscript{120} The global dimensions of judges' behavior may eventually prove useful in predicting other aspects of trial processes. See infra notes 131-41 and accompanying text. Cf. Milmoe, Rosenthal, Blane, Chafetz & Wolf, The Doctor's Voice: Postdictor of Successful Referral of Alcoholic Patients, 72 J. Abnormal Psychology 78 (1967) (doctor's hostility, assessed from nonverbal behavior only while speaking of patients, is negatively related to doctor's effectiveness in the referral of alcoholic patients); Mediation, supra note 23, at 425 (less competent camp counselors are more prone to biasing effects, as reflected in their tone of voice when talking about their campers, while more competent counselors do not show such effects); Nonverbal Communication, supra note 23, at 122-29 (therapists are less hostile, less anxious and less dominant in their tone of voice only when talking to and about their more acutely ill patients).


\textsuperscript{122} Blanck, Rosenthal, Hart & Kraffa, infra note 138.

emotion and attitudes expressed in the different verbal and nonverbal channels.\textsuperscript{124} Our empirically-based framework, in conjunction with other case-oriented analyses of judges' behavior, begins to address these issues. The next section highlights our efforts to pursue this line of research through the refinement of a theoretical model of the impact of judges' behavior on the trial process.

\textbf{B. Research in Progress}

Trial judges have a responsibility in a jury trial to avoid any behavior that could "appear" to the jury to indicate the judge's beliefs about the defendant's innocence or guilt. It is our goal to contribute to the study of judges' behavior and its important relationship to fairness in the courtroom. Our approach has been to help identify the types of variables that need to be studied to achieve a more systematic understanding of judges' behavior and its potential influence on juries' decisionmaking processes.

In our ongoing research, we approach this problem from several vantage points. Part One below briefly describes our studies designed to highlight the importance of training in nonverbal communication skills and its potential relevance to judges' behavior, other trial participants, and perceptions of fairness in the courtroom. Part Two below outlines further development and refinement of our theoretical model of judges' behavior.

\textit{1. Improving Sensitivity to Nonverbal Communication}

As evidenced by the community of judges' concerns described above,\textsuperscript{125} the practical usefulness of programs of training in communication skills, with particular emphasis on improving awareness of and sensitivity to nonverbal communications, will become increasingly important to trial participants. We have pilot-tested a field-based method for evaluating the effects of practice and training on skill at interpreting nonverbal messages.\textsuperscript{126} For example, in one program with basketball players, not only did our efforts improve sensitivity to nonverbal messages, but the effects of practice and training were related to the type of communication and to differences in individual competencies and abilities.\textsuperscript{127}

Specifically, in the "basketball study," we administered two versions of a standardized test of nonverbal decoding skill to the Harvard University varsity and junior varsity men's basketball teams during the course of the season. In addition to exploring the general benefits of training, we explored the relationship between nonverbal decoding skills and basketball ability, particularly defensive basketball ability which may rely on an acute sensitivity to body movements and body cues.

\textsuperscript{125} See supra notes 106-09 and accompanying text.
\textsuperscript{126} Blanck & Rosenthal, supra note 23, at 210-11.
\textsuperscript{127} Blanck & Rosenthal, supra note 23. See also Hart, Improving Sensitivity to Nonverbal Communication (1990) (unpublished manuscript) (similar empirical study on training effect).
Interestingly, the results of our study showed that superior basketball players were relatively better than less expert basketball players in interpreting body cues as opposed to facial cues. We suggested, as any basketball coach might believe, that better defensive players are less likely to be deceived or "faked out" because, instead of watching the opponents' face, these players are more functionally attentive to body cues and movements.\(^{128}\)

We are currently exploring how particular training programs on verbal and nonverbal courtroom communication can help trial participants improve their communicative skills, both in terms of interpreting (i.e., decoding) and sending (i.e., encoding) verbal and nonverbal behaviors.\(^{129}\) Our preliminary findings suggest potential avenues of future research with trial judges and other trial participants on the impact of training on courtroom communication and fairness, including study of: (1) the type of information expressed in different channels of communication\(^{130}\) and its cumulative impact on the jury over the course of a trial;\(^{131}\) (2) how and when nonverbal behaviors alone--of judges, witnesses, or counsel--"leak" hidden messages to juries; (3) the long-term effectiveness of "consciousness-raising," awareness, or training programs\(^{132}\) on the importance of verbal and nonverbal behavior in the courtroom; (4) the development and effectiveness of pattern instructions, presented at different points during the trial, cautioning the jury about the potential impact of the judges' and other trial participants' behavior on the trial process;\(^{133}\) and (5) strategies designed to "enhance" judges' interpersonal competencies to the type of case before the court (e.g., communicative sensitivity in cases involving children).\(^{134}\)

2. The Next Step in the Development of the Research Model

We are continuing to explore the extent to which judges' global and micro behaviors predict other aspects of the trial process through the refinement of our theoretical model of judges' and juries' behavior. The variables in the research model, presented in Figure 2, are described below.

\(^{128}\) Blanck & Rosenthal, supra note 23.
\(^{129}\) See Blanck, Courtroom Communication and Fairness (working paper 1990). For related discussions, see Givens, The Way Others See Us, 19(3) Judges J. 20 (1980); Shapiro, Can We Match the Skills of Our Judges to the Needs of Our Courts?, 62 Judicature 164, 164-65 (1978) (discussing possibility of matching judges' knowledge and skills with type of case).
\(^{130}\) That is, whether the channel contains written, verbal, or their nonverbal information.
\(^{131}\) For example, how the information affects jurors in terms of ultimate perceptions of trial fairness.
\(^{132}\) See supra notes 106-09 and accompanying text.
\(^{133}\) This is particularly interesting in light of the American Bar Association's recently adopted amendments to the Code of Judicial Conduct (1990). See supra note 113 and accompanying text. Some states, for example, California, have pattern instructions directing the jury to take no cue, neither verbal nor nonverbal, from the judge as to his or her opinion about the guilt or innocence of the defendant. See Appearance of Justice, supra note 2, at 155-56 and App. A.
\(^{134}\) Cf. Givens, supra note 125 ("matching" judicial competencies); Shapiro, supra note 125 (discussing possibility of matching judges' knowledge with type of case).
**FIGURE 2**

Model for the Study of Judges' and Juries' Behavior

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Background</th>
<th>Expectancy</th>
<th>Behavioral</th>
<th>Trial Outcome</th>
<th>Judge/Jury Agreement/Disagreement</th>
<th>Sentence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Of Variables†</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
</tr>
<tr>
<td>Variables Under Study</td>
<td>Defendant's Criminal History</td>
<td>Judges' Beliefs Prior to Jury Verdict About Expected Trial Outcome</td>
<td>Verbal and Nonverbal Global Styles and Micro Behaviors</td>
<td>Jury Verdict</td>
<td>Judges' Beliefs After Jury Verdict</td>
<td>Magnitude of Sentence Imposed by Judge</td>
</tr>
</tbody>
</table>

("A") **Background Variables.** These variables refer to the more stable attributes of the trial participants. For example, the background variables associated with trial judges, such as age, sex, race, political ideology, and number of years on the bench, have been shown to influence judges' behavior toward trial participants.\(^{135}\) Similarly, the background variables of jurors, including age, sex, race, political ideology, occupation, and income, have been shown to influence jury decision-making processes.\(^{136}\) Finally, the defendant's characteristics, such as race or criminal record, have been shown to influence the decisions of judges and jurors.\(^{137}\) Thus, although background variables should have no direct legal bearing on trial processes, prior research suggests that they are useful in predicting trial outcomes.

("B") **Expectancy Variables.** These refer to the judge's attitudes and beliefs for trial outcomes evaluated during the actual trial. A judge's particular expectations for trial outcome can affect the judge's behavior in such a way as to lead the jury to confirm the judge's expectations (an example of an "expectancy effect").\(^{138}\) This variable assesses how a judge's expectations, as measured during the trial process but prior to the jury's verdict, relate to trial processes, jury verdicts, judge-determined trial outcomes and/or to the sentence ultimately imposed by the judge. Under some conditions, we believe that a judge's "expectancy effects" might act to deprive a defendant of a fair and impartial trial.

("C") **Transmitting Variables.** These variables, the focus of this article, refer to the verbal and nonverbal micro and global behaviors that communicate the judge's attitudes and beliefs to the trial participants. Moreover, as suggested by the present results, the "C" variables encompass

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\(^{†}\) The simple relationships are between any two variables in the model. Cumulative relationships (e.g., "A-B-C" predicting "D") involve more than two variables.

\(^{135}\) See Dorch & Fontaine, Rates of Judges' Gaze at Different Types of Witnesses, 46 Perceptual Motor & Skills 1103 (1978).


more than merely the content of the judges' verbal remarks. As anecdotal evidence and caselaw show, judges sometimes influence jury verdicts through nonverbal behaviors alone, such as facial expressions and tone-of-voice cues. Such behaviors have been held to influence juries in an impermissible manner or to an impermissible extent.139

("D") **Outcome Variables.** These variables refer to actual trial outcomes, that is, in the model to the jury's finding of the guilt or innocence of the defendant. Outcome variables, or the behavior of the jurors after interaction with the judge, may themselves be affected by other variables in the model, e.g., defendants with a criminal history may be more likely to receive guilty verdicts.140

In a forthcoming article, we extend our working model to include two other trial process and outcome variables.

("E") **Judge/Jury Agreement/Disagreement Variables.** These refer to the judges' behavior or attitudes about the trial process after the jury reaches its verdict. For purposes of our model, this variable also refers to the magnitude of the agreement or disagreement between the judge and jury in terms of their views about trial outcome. The "E" variable is similar conceptually to Kalven and Zeisel's classic research in The American Jury. This seminal work sought to answer two basic questions. First, what is the magnitude and direction of the agreement/disagreement between judge and jury? Second, what are the sources and explanations of such agreement/disagreement?141 The "E" variable in our model represents an attempt to integrate the learning of the Kalven and Zeisel study, that is, their agreement/disagreement findings, into our working model of judges' behavior. The goal is to provide additional insight into the groundbreaking work evidenced in The American Jury.

("F") **Sentence Imposed.** This variable, the final temporal link in the decision-making chain in our model, refers to the sentence imposed by the judge. The "F" variable assesses the magnitude of the sentence imposed relative to the maximum possible sentence under the charge. It is predicted, for example, that the degree of the judge's agreement/disagreement with the verdict ("E" variable) will be reflected in the sentence imposed by the judge ("F" variable).142

The forthcoming article in this series thus provides more detailed analyses of the chains of the variables in our working model. For example, our analyses describe the simple relationship and impact of background variables, such as the defendants' criminal history, on trial outcome, e.g., the "A-D" relationship. Similarly, the model describes the relationship between defendant's criminal histories and judges' subsequent style of micro and global verbal and nonverbal behavior in relating to their juries, e.g., the "A-C" relationship.

It is hypothesized and tested that the model will be most powerful, that is, most predictive, when

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139 Appearance of Justice, supra note 2, at nn. 37-48.
140 Id. at 112-13.
141 H. Kalven & H. Zeisel, supra note 2, at 55.
examining the "chains" of variables taken together. One example of a cumulative chain is the extent to which background, expectancy, communicative, and judges' post-verdict attitudes ("A-B-C-E" chain) together predict trial outcome ("D" variable) or the ultimate sentence imposed by the judge ("F" variable).143

We also expect, as obvious as it might sound, that the strength of the evidence itself will be an important predictor of trial outcomes.144 In this additional line of study, we assess the relative impact of the factual evidence (for example, in terms of its support of a guilty or innocent verdict) and of the six variables in the model. We believe that in marginal or "close cases," the judges' beliefs, global behavior, and the participants' background variables will play an increasingly important role in predicting trial outcomes and the sentence imposed.145

V. CONCLUSION

This study is a first attempt at exploring systematically the behavior of trial judges as assessed from "live" trials. Despite relatively small sample of judges in our study, all of whom knew they were being videotaped, reliable and externally valid dimensions of judges' behavior emerges. The resulting four global dimensions--judicial, directive, confident, and warm--provide an empirically-based description of judges' behavior, and are consistent with prior researchers' clinically-oriented attempts to describe such behavior. This article then presents new findings which suggest that these four dimensions or styles may be effectively and economically studied by other "micro" behaviors of these same judges. The implications of the empirical framework and of the working theoretical model for courts, judges, legal practitioners, scholars, and social scientists are discussed. The article next highlights our continuing program of research that examines further the extent to which global and micro behaviors can be used as predictors in our model of judges' and juries' behavior.

It is interesting to underscore that over twenty-five years ago, Kalven and Zeisel ended their classic study of The American Jury with a postscript emphasizing the importance of what they referred to as the exploration of "non-vocal judicial behavior."146 The phrase refers not to the judges' opinions, but the way or "manner" in which they decide cases.147 Although The American Jury research emphasized the "non-vocal behavior of juries," Kalven and Zeisel conclude that "the tracing of connections between [their] study of jury behavior and various theories of judicial behavior, however tempting, will have to await another day." We hope our efforts begin to evidence that day has arrived.

143 Our preliminary results for these analyses suggest that trial outcome is predicted by knowledge of the "A-B-C-E" chain; that is ("A") the defendants' criminal histories, ("B") judges' beliefs for trial outcome, ("C") the behaviors of the judge, and ("E") the degree to which the judges agree with their juries' verdicts after the trial. See Blanck, Rosenthal, Hart & Krafla, supra note 138; see also Blanck, Hart & Rosenthal, The Impact of Legal and Extra-Legal Factors on Jury Decisionmaking (unpublished manuscript 1991).

144 Strength of evidence variable could be viewed as another type of background ("A") variable.

145 Cf. Kalven & Zeisel, supra note 2, at 134-35 (analysis of evidence in terms of "close" and "clear" cases).

146 Kalven & Zeisel, supra note 2, at 490.

147 Id. (quoting Harvard Professor Herman Oliphant who claimed that such non-vocal judicial behavior "will be the dominant subject-matter of any truly scientific study of law"). See A Return to Stare Decisis, 6 Am.L.Sch.Rev. 215 (1927).