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Nonverbal Communication and Leakage in the Behavior of Biased and Unbiased Teachers

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In this article we present a brief exposure method of assessing teachers' verbal and nonverbal behavior. Highly biased and unbiased teachers were videotaped addressing their classes, and judges rated randomized 10-s clips. Leakage, the transmission of more positive affect in controllable channels while negative affect is given away involuntarily in less controllable channels, was assessed by linear contrast analyses of three channels in a *leakage hierarchy:* transcript of speech content, face, and body. As hypothesized, biased teachers demonstrated systematic and substantial leakage effects in affective variables (factor-based, composite scores reflecting dogmatic behavior and negative affect), whereas unbiased teachers showed no leakage. As predicted, no leakage was found for any group in active teaching behavior, a nonaffective composite variable. Biased and unbiased teachers did not differ in comparisons for each separate channel. These findings are consistent with previous findings on differences between biased and unbiased teachers.

It is now well established that students' social class and ethnicity serve as major variables in the formation of teachers' expectations for students' intellectual performance (Baron, Tom, & Cooper, 1985; Rosenthal & Jacobson, 1968). Teachers differ importantly, however, in the degree to which they are susceptible to such stereotypically biasing information. Babad (1979) has developed a behavioral measure of susceptibility to biasing information based on the Goodenough-Harris Drawing Test (Harris, 1963) and has used it successfully to identify personality and behavioral differences between those who are highly susceptible to biasing information and those who are relatively unsusceptible to bias (Babad, 1979; Babad & Inbar, 1981). Babad, Inbar, and Rosenthal (1982a) showed that highly biased teachers, identified through this instrument, differed from unbiased teachers in that the former manifested strong self-fulfilling expectancy effects (both Pygmalion [positive] and Golem [negative] effects) in their own differential behavior and in the performance of their students. In this study we used this measure to identify highly biased and unbiased teachers, and compared various verbal and nonverbal components in their teaching style, as part of an overall attempt to understand how expectations affect teacher and student behavior.

To use Babad's (1979) measure, each respondent is taught the scoring procedures of the Goodenough-Harris Drawing Test (Harris, 1963) and is then asked (under the guise of a "reliability exercise") to score two drawings allegedly drawn by a child of high ethnic and socioeconomic status (SES) and by a child of low status. The drawings were actually duplicated from the test manual, so their objective scores were known. They are almost of equal quality, and the drawing attributed to the high-status child is awarded in the test manual 3 points more than the drawing attributed to the low-status child. The difference between the scores attributed to the two drawings by a given respondent (adjusted for the objective 3-point difference) serves in this instrument as a measure of that respondent's susceptibility to bias.

Babad (1988) considered this instrument to be a cognitive style, behavioral measure of personality that avoids the pitfalls of other measures of personality (mostly self-report questionnaires) used in expectancy and bias studies. Administrations of this instrument to various samples yielded consistent distributions that made it possible to characterize groups of highly biased (i.e., those attributing a much higher score to the high-status than to the low-status child); mildly biased; unbiased (i.e., those who are not influenced by the biasing information and score the drawings objectively to reach a 3-point difference), and reverse-biased (i.e., those attributing a higher score to the low-status child) individuals. To date, all studies by Babad and his associates focused on comparisons between extreme groups of highly biased and unbiased respondents. The findings thus far support a conceptualization of susceptibility to bias as a manifestation of dogmatism, although the Dogmatism Scale and other self-report questionnaires did not correlate systematically with behaviorally measured susceptibility to bias (Babad, 1988).

Highly biased college students described themselves (on an adjective checklist) as being more objective and reasonable and as being less given to emotional extremes than did unbiased students (Babad, 1979, Study 1). Another sample of biased college students described their political views in more extreme

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terms than did unbiased students (Babad, 1979, Study 2). This relation between extremity of held attitudes (independent of specific content) and bias was confirmed with a sample of teachers in a study using a slightly different bias instrument (Babad, 1985). Babad and Inbar (1981) found that highly biased teachers-in-training wrote significantly more dogmatic statements than did unbiased teachers in responding to a series of educational events. Babad, Inbar, and Rosenthal (1982b) discovered that biased teachers manifested a strong halo effect in nominating high- and low-expectancy students (i.e., nominating not only according to appropriate grades, but also according to physical appearance, quality of clothing, student's SES, etc.), whereas unbiased teachers showed no such halo effect.

Babad and Inbar (1981) investigated the teaching styles of extreme groups of biased and unbiased physical education teachers-in-training who were identified by the bias instrument. They found marked and consistent differences between the two groups of teachers in behavior toward the entire class. Highly biased teachers were rated as being more rigid, autocratic, distant, preferential, unstable, impulsive, less person oriented and more task oriented, and less trusting than were unbiased teachers. These differences were reflected in effects on students' behavior in those classes (in trust, apathy, and dependence) and were further validated by ratings provided by the teachers' field supervisors on the basis of a long acquaintance.

Babad et al. (1982a) further investigated those physical education teachers to determine whether differential teacher behavior and expectancy effects were a function of teachers' bias. The design included natural, teacher-nominated groups of high- and low-expectancy students and an experimentally induced high-expectancy group (as in the original Pygmalion research). The dependent variables included observations of teachers' differential behavior as well as measures of students' performance for the teachers. The findings were dramatic: Unbiased teachers behaved equitably toward the three groups of students, and the students subsequently showed similar levels of performance, despite potential differences among them in physical ability. Biased teachers showed a highly differential pattern, indicative of both a Pygmalion effect and a strong Golem effect (i.e., negative treatment of low-expectancy students). Biased teachers were more dogmatic, more critical, less friendly, and overall more negative toward their nominated low-expectancy students. The Golem effect was reflected in the noticeably low performance of the low-expectancy students (see also Rosenthal & Babad, 1985).

A Context-Minimal Method for Assessing Teachers' Nonverbal and Verbal Behavior

Research on the mediation of teacher expectancies (Dusek, 1985: Harris & Rosenthal, 1985) repeatedly indicates the subtle and elusive nature of influential teacher cues transmitted to students. Many of these behaviors are nonverbal, uncontrollable, and often undetectable in natural observation. In this article we present a relatively more microanalytic method of assessing teacher behavior that we have used in several studies (Babad, Bernieri, & Rosenthal, 1987, in press). In a natural classroom observation, exposure is long, allowing the observer to follow events throughout their entire course, thus obscuring (and potentially biasing) the judgment of specific segments of behavior. In addition, the observer is exposed to multichannel information: visual and auditory, verbal and nonverbal. The use of videotape recording makes it possible to (a) focus on the teacher alone without exposure to the students, (b) separate different verbal and nonverbal channels in teacher behavior, and (c) control the length of exposure of segments of teacher behavior to observers and judges.

In the method we have developed, brief video clips of teacher behavior were recorded in the classroom. The clips consisted of the teacher's face, body, face + body, and speech. These clips were then edited in the laboratory, creating nine clips that each depicted 10-s samples of teacher behavior in separate "channels" (face alone, body alone, face + body combined, unaltered audio, transcript, and content-filtered audio or tone of voice) and channel combinations (face + audio, body + audio, face + body + audio). Teachers were actually videotaped three times during one class session, and judges were therefore shown 3 × 9 randomized clips for each teacher. The judges rated each clip on a series of 10 rating scales.

In one study (Babad et al., in press), 15 judges rated brief clips depicting teachers' behavior while they talked about and talked to low-expectancy and high-expectancy students. Teachers were rated as showing more negative affect in the nonverbal channels and as being more dogmatic in the nonverbal and transcript channels when talking about low- as compared with high-expectancy students. When talking to students, facially communicated expectancy differences were found in ratings of negative affect and active teaching behavior. Grouping of teachers according to their susceptibility to bias showed that biased teachers showed more facial and verbal negative affect than unbiased teachers when talking about students. In talking to students, biased teachers showed a greater expectancy effect than did unbiased teachers in dogmatic speech.

In a second study we (Babad et al., 1987) used this method to examine differences between Israeli preschool and elementary school teachers. Preschool, remedial, and elementary school teachers were videotaped while teaching their classes, and clips depicting brief segments of their nonverbal and verbal behavior were rated by 15 judges. The findings support the widely held belief among educators about differences in behavior between Israeli preschool and elementary school teachers: The former were found to be less dogmatic and less negative in affect than the latter.

Babad and Inbar (1981) found substantial differences in overall classroom conduct between biased and unbiased teachers under conditions of ordinary classroom measurement. The question was whether such bias-related differences could still be detected when the context was minimized and when specific nonverbal and verbal channels were isolated.

Leakage in Nonverbal Communication

In his analysis of the mediation of expectancy literature, Babad (1988) discussed the gaps between teachers' affective behaviors and direct teaching behaviors and suggested that teachers often compensate disadvantaged students in teaching behavior, attempting to hide (or eliminate) their negative affective reaction to these children. These ideas may imply that differences

between biased and unbiased teachers in specific behaviors and specific channels would not be found. At the same time, these ideas bring to mind the concept of *leakage*, defined as the potential discrepancy between messages transmitted in different channels. Thus, although more positive affect may be transmitted in controllable channels, more negative affect may be transmitted (or leaked) in less controllable channels.

Leakage is a central concept in the current deception literature (see DePaulo & Rosenthal, 1979; Rosenthal & DePaulo, 1979; Zuckerman, DePaulo, & Rosenthal, 1981, 1986). The initial conceptualization of leakage was introduced by Ekman and Friesen (1969, 1974), who found differences between face and body channels in the likelihood of giving away deception. Ekman and Friesen distinguished between *deception cues* and *leakage cues* (the former give away deception, the latter betray the concealed information), and viewed leakage as being inversely related to potential controllability. More controllable channels are less leaky, whereas less controllable channels are more likely to reveal hidden information involuntarily.

Ekman and Friesen (1969) focused mostly on face–body differences in leakiness. More extended leakage hierarchies were presented by Rosenthal and DePaulo (1979) and Zuckerman et al. (1986). They included transcript of verbal content, face, body, content-filtered tone of voice, extremely brief exposure, and discrepancies between tone of voice and either facial expression or body movement in these hierarchies. In this investigation four pure channels were available for the formulation of a hypothetical leakage hierarchy: transcript of speech content, face, body, and content-filtered tone of voice. Because the latter channel had to be eliminated due to technical problems in the recording process, the final leakage hierarchy consisted of transcript, face, and body. The working hypothesis was that if teachers attempted to hide their negative affect, there would be relatively higher levels of transmitted negative affect in the leaky channel (i.e., body) than in the most controllable channel (i.e., transcript).

Although bias effects (i.e., a difference between biased and unbiased teachers) could be hypothetically expected for every channel and for every type of variable used, a leakage analysis goes beyond the overall affect-level approach into a multichannel approach (see Siegman & Feldstein, 1985), whereby the communication process is studied by examining channels in relation to each other. On the basis of all previous findings by Babad and his associates on differences between biased and unbiased teachers, and on the basis of the general notion in the mediation literature regarding compensation of low-expectancy students, we hypothesized in this study that highly biased teachers would show more leakage than would unbiased teachers in variables reflecting negative affect. High-bias teachers may express more negative affect toward their students than unbiased teachers, which may be detectable in the context-minimal approach used in this study. However, even if high-bias teachers experience no more negative affect than unbiased teachers, they may be less capable of controlling and hiding their affect because of their higher level of dogmatism and rigidity.

Method

Subjects

A group of 123 experienced preschool and elementary school teachers, undergoing in-service training for a senior teacher certificate in an Israeli teacher training college, served as the initial group from which we drew the present sample. We used Babad's (1979) method of measuring susceptibility to biasing information to identify biased and unbiased teachers. In the measurement and evaluation segment of their training program, we taught the teachers the scoring procedure of the Goodenough-Harris Drawing Test (Harris, 1963) and asked them—under the guise of a reliability exercise—to score two drawings allegedly made by a high-status and a low-status child but actually reproduced from the test manual. High status and low status were created by fictitious information, including name (European or Moroccan) and SES information (parents' education and occupation). The objective (test manual) difference between the two drawings was 3 points in favor of the drawing attributed to the high-status child (see Babad, 1979). Thus, a difference of 3 points between the two drawings was interpreted as no bias.

We selected a sample of 21 teachers from the initial group, representing extreme groups of highly biased and unbiased teachers. The group of biased teachers, drawn from the extreme end of the distribution, consisted of 14 teachers who had a mean difference of 10.36 in favor of the high-status child. All had bias scores above 8 points. As in the previous studies, the cutoff point was set 1 *SD* above the mean bias score. The shape of the bimodal distribution of bias scores further justified that cutoff point. The group of unbiased teachers ($N = 7$) had a mean difference of 2.86 between their two scores (6 teachers had a 3-point difference and 1 teacher had a 2-point difference between the two drawings). The overall mean difference for the entire group of 123 teachers was 4.8 points.

All 21 teachers in the sample were women, married or widowed, and mothers of children. Their ages ranged from 27 to 55 years, with a mean and median age in the mid- to late-30s. Their teaching experience ranged from 5 to 31 years, with a mean and median between 15 and 17 years. Nine were preschool teachers, 5 were elementary school teachers, and 7 were remedial teachers. (For a comparison of preschool, remedial, and elementary school teachers, see Babad et al., 1987).

With a sample of teachers as small as this, we could not ascertain sample representativeness. However, the fact that all teachers in this sample were accepted to a training program leading to a senior teacher status implied that they were sufficiently experienced and that they had passed selective screening and were positively evaluated and recommended by their supervisors.

The judges were 15 advanced undergraduate students in educational psychology at the Hebrew University of Jerusalem. All judges were Israeli women in their early to mid-20s. They were randomly selected from about 35 candidates who responded to a call for paid participation as raters in a research project. We did not inform the judges of the stratification of teachers in the sample, nor did we give them any training except for a comprehensive explanation of the rating task.

Videotaping in the Classroom

This study was part of a larger project focusing on teachers' nonverbal and verbal behavior when talking about and talking to high- and low-expectancy students (Babad et al., 1987). The data base for this report was derived from the videotaping of teachers talking to their entire classes. The camera was positioned at the back of the classroom, and the teacher could not tell whether it was filming at any given moment. Following a few minutes of habituation to the presence of the camera in the classroom, three sets of clips were recorded for each teacher, from the beginning, middle, and end portions of one class session. At each time point, three 10-s clips were taped, consisting (in random order) of the teacher's face, her body (from the neck down), and face + body (i.e., the entire person). The teacher's speech was recorded in all clips, and one was chosen at random to be used for the audio and transcript clips. Although the purest examination of the leakage hypothesis would simultaneously record different channels (i.e., transcript, face, and body),

a slight time lag of a few seconds between the channel recordings should not differentially affect leakage measurements for the two bias groups studied.

Preparation of Clips

Altogether, we prepared 27 clips for each teacher, 9 each for the three time points. The nine channels were as follows: face only (no speech); body only (no speech); face + body (no speech); audio only (recorded speech, no video picture); face + audio; body + audio; face + body + audio; transcript (a written account of the words spoken in the 10-s segment, with neither video nor audio recording); and content-filtered speech (a process that removes from the tape the high frequencies on which word recognition depends but preserves sequence and rhythm. (See Rosenthal, Blanck, & Vannicelli, 1984, and Rogers, Scherer, & Rosenthal, 1971, for a discussion of the process.)

All 27 clips for each teacher were set in a fixed randomized order to be viewed and rated by the 15 judges. We later dropped the ninth channel (content-filtered speech) from the analysis, because classroom noises and the children's speech blended with and obscured the teachers' tone of voice.

Judges' Ratings

The 15 judges viewed all 27 clips of each teacher and rated each clip on a series of 9-point scales: 1 = warm, 2 = dominant, 3 = task oriented, 4 = tense/nervous/anxious, 5 = condescending, 6 = hostile, 7 = clear, 8 = active/energetic/enthusiastic, 9 = democratic, and 10 = flexible. We chose the scales to represent frequently used variables in mediation research, covering a range of affective and direct teaching behaviors in the Climate and Input factors in Rosenthal's four-factor theory of mediation (see Harris & Rosenthal, 1985).

We did not give the judges any information about the purpose of the research, its design, the stratification of the teachers, or the specific conditions under which the clips were collected. We told them only that the research dealt with verbal and nonverbal elements of teacher–student interaction in the classroom and instructed them on how to complete the rating forms.

Clips were randomized within teachers. Judges rated all 27 clips for a given teacher before moving on to the next set of 27 clips. We used this procedure to increase the judges' precision in making finer distinctions between the clips for each teacher. (For a detailed discussion of issues in the selection and presentation of stimuli, see chap. 3 of Rosenthal, 1987).

Principal-Components Analysis and Composite Scores

We correlated the means of the judges' ratings, with each channel taken as a separate observation for each teacher, and computed a principal-components analysis. This analysis yielded three clear and interpretable factors after varimax rotation: (a) Nondogmatic Behavior, consisting of flexible, democratic, and warm (factor loadings = .91–.93); (b) Negative Affect, consisting of hostile, condescending, and tense/nervous/anxious (factor loadings = .80–.91); and (c) Active Teaching Behavior, consisting of task oriented, clear, dominant, and active/energetic/enthusiastic (factor loadings = .69–.94). This factor structure was fully replicated by a separate principal-components analysis computed for subsequent behavior ratings of the teachers talking about and talking to their high- and low-expectancy students. On the basis of these results and the homogeneity of the variances of all variables, we created three composite variables by averaging the relevant ratings. All results are reported for these composite variables only.

To explore the possibility of further reducing the data, we computed time period analyses of variance (ANOVAs). These ANOVAs yielded no changes over time for nondogmatic behavior and negative affect, and a trend of moderate, linear increases in active teaching behavior over time. We therefore decided to average the data across the three time periods. The correlations between the clips of different time periods centered around .65, further justifying our decision to pool them.

Reliability of Judges' Ratings

We computed split-half reliabilities for the three composite variables by correlating the mean ratings made by the first 7 judges with the mean ratings made by the remaining 8 judges. This type of correlation estimates the effective reliability of the mean rating by any randomly chosen group of 8 judges with the mean of any other randomly chosen group of 7 judges. To find the effective reliability that any randomly chosen group of 15 judges would have, we applied the Spearman-Brown formula to reflect that number of raters used (Rosenthal, 1982, 1987).

We computed reliabilities of the judges' ratings separately within the three time periods mentioned earlier. Because reliabilities did not vary substantially across time periods, we used the median reliability of the three times. Effective reliabilities ranged from a low of .68 when judges rated the body for negative affect to a high of .95 when they rated the face for dogmatic behavior. Over all eight channels and for all three dependent variables, reliabilities were fairly consistent and high (median $r = .90$).

Results

We compared the means of the judges' ratings for biased and unbiased teachers—averaged over the three time points—with each other. In all, we computed 24 t tests, that is, for three composite variables (nondogmatic behavior, negative affect, and active teaching behavior) × eight channels. None of the 24 t tests yielded a significant difference between biased and unbiased teachers. Thus, in the direct comparison of biased and unbiased teachers for each channel and for each composite variable, we found no significant differences in behavior as a function of bias.

However, contrast analyses addressing the leakage hypothesis presented a very different picture; here, we did find systematic differences between biased and unbiased teachers. We computed linear contrasts testing the hypothesis of increasing negativity in the shift from transcript to face to body (i.e., the leakage hierarchy). Leakage was predicted for nondogmatic behavior and negative affect but not for active teaching behavior. We considered both nondogmatic behavior and negative affect to be more affective (and therefore more likely to show leakage) because they are more evaluative in nature. The nondogmatic composite included warmth, an emotional variable crucial to the understanding of differential climate within a classroom. The active teaching composite has no evaluative connotations, reflecting direct instructional activity and effort, which are relatively void of underlying, hidden emotions and thus less likely to show leakage. Indeed, we did not find any leakage effects for active teaching behavior, and the means for the three channels did not show any discernible pattern for either group of teachers.

The results for dogmatic behavior and negative affect are presented in Tables 1 and 2, respectively. The tables show the mean ratings of biased and unbiased teachers for the three channels

Table 1
Mean Ratings and Leakage Contrast Analysis of Variance (ANOVA) Results of Teachers' Dogmatic Behavior When Talking to Their Entire Class

Results	Unbiased teachers ($N = 7$)	Biased teachers ($N = 14$)	Difference ($N = 21$)
Channel			
Transcript	4.89	5.15	0.26
Face	5.15	5.03	−0.12
Body	5.07	4.81	−0.26
Leakage contrast ANOVA			
F of linear contrast	0.49	15.52	5.33
p	*ns*	< .002	.04
r	−.27	.74	.47

Note. Ratings for teachers' dogmatic behavior represent the mean of flexible, democratic, and warm. Lower ratings represent a higher level of dogmatic behavior.

in the leakage hierarchy and the results of the leakage contrast ANOVAS.

For dogmatic behavior (Table 1), biased teachers showed a highly significant leakage effect $F(1, 13) = 15.52$, $p < .002$, $r = .74$, whereas unbiased teachers showed no leakage effect ($F < 1$). The leakage effect of the biased teachers was manifested in a trend of increasing dogmatism from the more controllable to the leakier channels, from transcript to face to body. In comparison, the means of the unbiased teachers for these three channels showed virtually no linear trend. The Bias × Leakage interaction effect was also significant, $F(1, 19) = 5.33$, $p = .04$, $r = .47$, indicating that biased teachers showed greater leakiness than did unbiased teachers in their communication of dogmatic behavior.

We found a similar pattern of results for negative affect (see Table 2). Biased teachers showed a highly significant leakage effect, $F(1, 13) = 16.40$, $p < .002$, $r = .75$, whereas unbiased teachers showed essentially no leakage effect ($F < 1$). Biased teachers showed a trend of increasing negative affect from transcript to face to body. In comparison, the means of the unbiased teachers showed virtually no linear trend. The Bias × Leakage interaction effect was also significant, $F(1, 19) = 6.47$, $p = .02$, $r = .50$, indicating that biased teachers showed greater leakiness than did unbiased teachers in their communication of hostile, condescending, and tense/nervous/anxious behavior.

Discussion

The results have shown that extremely brief samples of teacher behavior in isolated channels of verbal and nonverbal behavior can be effective in identifying subtle differences in style between groups of biased and unbiased teachers. Babad and his colleagues showed the effectiveness of this context-minimal method in tracing expectancy effects when teachers talked about and talked to students (Babad et al., in press) and in discovering differences in classroom conduct between preschool, remedial, and elementary school teachers (Babad et al., 1987). Despite the use of very brief exposure and isolated channel cues, magnitudes of effects in these studies were substantial, not smaller than those found in bias and expectancy studies based on more conventional measures of classroom teacher behavior.

We found systematic differences between biased and unbiased teachers in this study; biased teachers showed a greater discrepancy between their intended and unintended affective transmissions than did unbiased teachers. In the affective variables (e.g., hostile, condescending, tense/nervous/anxious, not warm, not flexible, not democratic), biased teachers showed a consistent and substantial leakage effect, that is, leaking more negative affect through the less controllable compared with more controllable channels. Unbiased teachers showed no such leakage effect. As expected, no leakage effect was found for either group in active teaching behavior. These findings provide further validation for the construct of bias and support previous findings (Babad, 1979; Babad & Inbar, 1981; Babad et al., 1982a, 1982b) in demonstrating substantial differences between biased and unbiased teachers in classroom conduct, in processes mediating teacher behavior, in personality, and in cognitive style.

It should be noted that no substantial differences between the bias groups were found in channel by channel comparisons in this study and in the Babad et al. (in press) study. Babad et al. (in press) found that, using this measurement method, biased and unbiased teachers were almost equally likely to show expectancy effects in talking about and talking to students; in this study the comparison for each channel separately showed a similar pattern between the two groups of teachers. The difference between biased and unbiased teachers was discovered in a more sophisticated and subtle index that measures the configuration of particular channels in relation to each other rather than to each channel alone. It appears that when addressing their entire classes, biased teachers were trying harder to hide negative affect than were unbiased teachers.

The evidence on leakage in this study contributes an educational instance to the growing literature on leakage in deception research. The leakage effects in this study emerged in naturally occurring behavior recorded in an educational field setting,

Table 2
Mean Ratings and Leakage Contrast Analysis of Variance (ANOVA) Results of Teachers' Negative Affect When Talking to Their Entire Class

Results	Unbiased teachers ($N = 7$)	Biased teachers ($N = 14$)	Difference ($N = 21$)
Channel			
Transcript	2.20	2.00	−0.20
Face	2.18	2.19	0.01
Body	2.22	2.33	0.11
Leakage contrast ANOVA			
F of linear contrast	0.07	16.40	6.47
p	*ns*	< .002	.02
r	.10	.75	.50

Note. Ratings for teachers' negative affect represent the mean of hostile, condescending, and tense/nervous/anxious. Higher ratings represent a higher level of negative affect.

whereas most leakage studies involved experimentally created deception situations. This evidence, showing leakage of negative affect by particular teachers, is powerful: If it can be detected from extremely brief, 10-s samples of behavior, how much hidden negative affect can be detected by pupils in their ongoing interaction with the teacher? Finally, the finding that leakage was clearly correlated with teachers' susceptibility to bias sheds light on underlying dynamics that can be meaningful and relevant for both bias research and deception research.

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