In the Blink of an Eye: Estimates of Teacher Effectiveness from a 24-second Thin-Slice of Behavior

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ABSTRACT

This study measured participant perceptions of an instructor based on varying levels of information. Independent variables were photograph vs. no photograph and quality of verbal information (clear audio, filtered audio, written). Participants rated the instructor using a Student Evaluation Inventory (SEI) and a bipolar adjective questionnaire. Participants with the most information rated the instructor most similar to students who had a class with the instructor. There was a strong correlation between SEI scores and bipolar adjective scale scores. Participants who received a photograph were more accurate, regardless of audio condition.

INTRODUCTION

In his book *Blink,* Malcolm Gladwell (2005) writes about thin-slicing. "'Thin-slicing' refers to the ability of our unconscious to find patterns in situations and behavior based on very narrow slices of experience" (Gladwell, 23, 2005). Gladwell demonstrates that even with very limited information, thin-slicing can produce surprisingly accurate results. Gladwell notes a study by Gosling (2002) in which participants rated themselves, were rated by their friends, and were also rated by strangers who had been in their dorm rooms for fifteen minutes but had not met the participant. The friends evaluated participants based on "thick slices" of behavior; they had months or years of experience with the friend. The strangers rated participants based on a thin-slice, the room observation. Overall, the strangers were actually more accurate than the participants' friends.

The implications of thin-slicing are especially relevant to the study of impression formation. Often impressions need to be made in a time period that only allows thin-slicing. Oltmanns, Friedman, Fiedler & Turkheimer (2004) showed that raters were able to accurately rate levels of Big Five personality traits based on 30 seconds of a videotaped interview. The thin-slicing technique can be combined with previous research on communication factors in impression formation to determine which components are most salient in thin-slicing.

Many studies have examined the relative importance of verbal and non-verbal communication in impression formation. Argyle and Alkema (1971) studied the impact of messages whose verbal and non-verbal signals did not match. This study considered tone of voice to be non-verbal communication. They found that while both verbal and non-verbal signals had an effect on the perceived communication, non-verbal signals, including tone of voice, had a bigger impact on the interpretation of the message. Apple, Streeter, and Krauss (1979) manipulated the pitch and speech rate of many speakers and found that the pitch and speech rate affected the participants' ratings of the speakers on such measures as honesty and potency. Archer and Akert (1977) observed that participants who were given only verbal transcripts did not interpret situations nearly as accurately as participants who watched video clips of interactions.

Ambady and Rosenthal (1993) analyzed thin-slicing in Student Evaluation Inventories (SEIs) of professors. Participants viewed 6-second silent video clips of professors before completing the SEI and evaluating the professors on characteristics such as honesty, confidence, and supportiveness. They found that by using this strictly non-verbal information, the raters could accurately predict the teacher's end of semester evaluations.

We expanded on Ambady and Rosenthal's (1993) application of thin-slicing to SEI's by analyzing different components of verbal communication separately. While Ambady and Rosenthal focused on non-verbal information through silent video, we primarily studied the effect of varying levels of verbal information. In our study, participants received thin-slices of verbal communication and were asked to rate the professor's effectiveness based on a Student Evaluation Inventory and a bipolar adjective questionnaire. We hypothesized that participants who had the most information available to them would have the most accurate ratings of the professors.

METHODS

Participants

The participants in our study were 240 women, primarily from a general psychology course at the University of Wisconsin-La Crosse. We recruited only women participants to control for potential gender effects. In addition, we discarded data from any participants who reported having previous knowledge or experience with the target professor. Students participated to receive class credit.

Materials

We secured the permission of a university professor to use his voice and likeness as well as to report his mean student evaluation rating averaged from four semesters. We audio taped our target professor's class lecture and chose a 24-second clip that contained neutral content in the professor's natural speaking voice. We also photographed the professor. We altered the clip and combined some versions of the clip with the photograph of the professor for a total of six conditions.

Procedure

Participants were randomly assigned to one of the six conditions. In the first condition, participants viewed a photograph of the professor and heard the unaltered audio clip. In the second condition, participants viewed a photograph and heard a content filtered audio clip. By removing specific frequencies from the clip, the actual words spoken were unintelligible, but the tone of voice and rate of speech were preserved. In the third condition, participants viewed the photograph and read a verbal transcript of the audio clip. Participants in the fourth condition received an unaltered audio clip only. In the fifth condition, participants received a content filtered audio clip only, and in the sixth condition, participants were given only the verbal transcript.

After receiving their respective treatments, participants were asked to rate the professor using the Student Evaluation Inventory from the professor's department and a bipolar adjective questionnaire based on the nonmolar behaviors used in Ambady and Rosenthal's study (1993). The professor's class also completed these measures at the end of the semester.

RESULTS

Table 1. Mean SEI and bipolar scores by condition

Condition	Mean SEI[a]	Mean Bipolar[b]
Photo, audio clip	3.69	5.27
Photo, content filter	3.26	4.58
Photo, transcript	3.15	4.56
Audio clip	3.48	5.07
Content filter	2.95	4.03
Transcript	2.76	4.08
Actual class	4.42	6.09

[a] The higher the number, the more favorably the professor was rated (1-5).

[b] The higher the number, the more favorably the professor was rated (1-7).

We analyzed the data using a 2x3 factorial ANOVA for SEI and bipolar adjective scale scores. Results indicated that there was a main effect of both photograph and clip. The main effect of photograph was significant at $F(1, 181)=8.69$, $p=0.004$ for bipolar scores and at $F(1, 180)=21.13$, $p<0.001$ for SEI scores. Thus, the groups that received a photograph of the professor rated him more positively. His average class ratings were higher than the average ratings for each experimental condition, so a more positive rating is closer to the professor's class rating, which is our definition of accuracy.

The main effect of clip was significant at $F(2, 181)=16.59$, $p<0.001$ for bipolar scores and at $F(2, 180)=17.58$, $p<0.001$ for SEI scores. The groups that received the unaltered audio clip gave ratings that were more similar to his actual class ratings than the content filtered clip groups, which gave ratings more similar to the professor's class than the verbal transcript groups. Thus, participants who received the unaltered audio clip rated the professor more positively and more accurately on both measures.

Further analysis indicated that there was no interaction between the effects of photograph and clip, $F(2, 181)=0.59$, $p=0.56$ for bipolar scores and $F(2, 180)=2.32$, $p=0.10$ for SEI scores. Pairwise comparisons at alpha<.05

indicated that more information led to scores closer to the professor's class results, and therefore, more information led to higher accuracy. See Table 1.

There was also a strong positive correlation, r=0.81, between SEI and bipolar scale scores.

DISCUSSION

Our hypothesis was that raters who had the most information available to them would have the most accurate ratings of the professor. The data support our hypothesis, as shown by Table 1. Based on our data, we concluded that student's evaluations of instructors at the end of a semester may not differ from their ratings after the first few minutes of class.

In their 1993 study, Ambady and Rosenthal used six-second silent video clips and found that non-student raters could accurately predict actual student ratings. Their results were stronger than the results we found in our study, even though our clip was four times as long. This suggests that non-verbal information is more important in accurate impression formation than verbal information. The importance of non-verbal information is also highlighted by the main effect of the photograph. Though the professor was not young or traditionally attractive, groups with a photograph rated the professor more positively and accurately. This suggests that non-verbal information in thin-slicing plays an especially crucial role in accurate impression formation.

Research illustrates the importance of thin-slicing in everyday impression formation. In addition to being applicable to job interviews or blind dates, our research demonstrates that thin-slicing can be applied to distance education and online courses especially where video lectures are not available. The main effect of the photograph suggests that professors could improve their relationship with students, and the students' overall satisfaction with the course and the professor, simply by putting their picture on the course website.

The strong correlation between SEI and bipolar scores suggests that students' SEI ratings of professors incorporate many of the components included in our bipolar scale. Students may be evaluating professors more on approachability and emotional and educational support than on preparation and presentation of specific course material. More research could be conducted to evaluate what factors go into a students' decision on a rating of the professor.

The transcript group, which we thought had more information than the content filtered group, had less favorable and less accurate ratings of the professor. This may have occurred because the professor frequently used verbal fillers, such as umm or ah. These verbal fillers were included in the transcript, but were unintelligible in the content filtered clip, which may account for the relative accuracy of these groups. Alternately, text may contain less information relevant to forming accurate judgments than tone of voice and speech rate.

The professor's most recent SEI ratings were unusually high (4.7 out of 5). This led to a ceiling effect that our experimental conditions were unable to approach. Overall, the general trend of our data supports our hypothesis, but is not conclusive. All experimental groups differ significantly from the professor's class, but most of them do not significantly differ from each other. In addition, due to the low variability of scores, no correlations could be made.

Further research could examine a professor with more variability in his or her SEI rating. Other research could be done to identify the aspects of non-verbal information that are most important when forming accurate first impressions. Alternately, the ability of these findings to generalize to other situations could be studied. The transcript condition of this study could be altered to examine the effect of verbal fillers on ratings of the professor. Multiple professors could be used to conduct a similar experiment, perhaps one in which participants rate both male and female professors. Clearly, thin-slicing has many applications to crucial life decisions and deserves further attention through continued research.

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