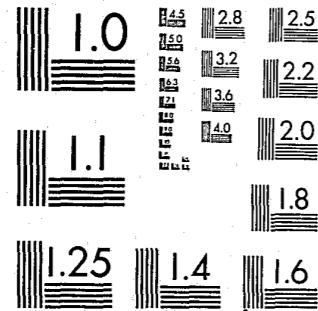


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EFFECTS OF INFORMATION AND PRACTICE ON DETECTION OF DECEPTION*

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Recent research on the physiological detection of deception (PDD) has indicated a high degree of accuracy of control-question (CQ) polygraph examinations (Podlesny & Raskin, 1978; Raskin, Barland, & Podlesny, 1976; Raskin & Hare, 1978). It can be reasonably anticipated that the results of such research will provide additional justification and impetus for increased confidence and continued use of polygraph examinations in investigations and judicial proceedings.

As the use of the polygraph increases in these settings, so does the public's interest and curiosity. In addition to reports and articles in scientific and professional publications, the popular press has recently focused a good deal of attention on "lie detection" in its various forms. Thus, it is likely that the public and criminal suspects will have increased access to information and materials concerning the details of PDD techniques. That situation requires a knowledge of the effects of possession of detailed information and practice on the effectiveness of the CQ technique.

METHOD

Seventy-two male subjects were recruited from the local community by means of a classified newspaper advertisement. They were paid \$7.50 for their participation and a \$10 bonus if they produced a truthful outcome on the test. No subject had any previous polygraph tests. Thirty-six Guilty subjects received taped instructions to steal a ring from a secretary's office and 36 Innocent subjects were simply informed that a theft had been committed. All subjects were instructed to deny having committed the theft when they were administered a CQ polygraph test. Prior to that test, 24 subjects in the STD group (12 innocent and 12 guilty) simply waited in a room for 40 min.

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Twenty-four subjects in the INFO group received detailed information about the polygraph, the CQ test, pertinent physiological responses, and suggestions about methods to appear innocent on the test. The remaining 24 subjects (INFO + PRACTICE) received the detailed information and were given two practice polygraph examinations and feedback about their performance. Following the treatment session, each subject was given a CQ polygraph examination by an examiner who was blind regarding the subject's guilt or innocence or his treatment group.

The CQ tests were the same for all subjects, with the exception of minor modifications to the control questions. The sequence of questions was as follows:

1. Is your last name _____?
2. Regarding whether you took that ring, do you intend to answer truthfully each question about that?
3. Do you understand that I will ask only questions that we have discussed?
4. During the first _____ years of your life did you ever take something which didn't belong to you?
5. Did you take that ring?
6. Between the ages of _____ and _____ did you ever take something which didn't belong to you?
7. Did you take that ring from the desk?
8. Were you born in the United States?
9. Prior to 1975 did you ever deceive someone?
10. Do you have that ring with you now?

At least three charts (three times through the questions) were run on each subject. Field scoring was based upon measures of skin conductance, changes in blood pressure, respiration, and digital vasomotor activity. The charts were evaluated according to the numerical scoring procedure described by Podlesny and Raskin (1978) using an inconclusive zone of ± 5 . The charts were evaluated by the

examiner at the conclusion of each test. The same charts were blindly evaluated at a later time by another experimenter who had no contact with the subjects and whose scores provided the basis for decisions of guilt or innocence and for the data analyses.

RESULTS

The evaluation for the STD group and the INFO group were identical: 88% correct, 4% wrong, and 8% inconclusive for each group. For the INFO + PRACTICE group, 62.5% of the evaluations were correct, 25% were wrong, and 12.5% were inconclusive. Excluding inconclusives, the accuracy rate was 95% for the STD group and for the INFO group and it was 71% for the INFO + PRACTICE group.

Only one error was made in each of the STD and INFO groups, and both were false positives. No guilty subject in either of these groups was able to produce a truthful outcome on the test. Six errors were made in the INFO + PRACTICE group, three false positives and three false negatives.

The total numerical score for each subject's first three charts was compared for guilty and innocent subjects in the three treatment groups. Analysis of variance revealed a highly significant difference between the scores of guilty and innocent subjects, $F(1/66) = 72.25$, $p < .001$, but no difference between the three treatments, $F(2/66) = 0.40$, $p = .67$. There was a significant Condition X Treatment interaction, $F(2/66) = 4.83$, $p = .01$. A Newman-Keuls test revealed that the scores of innocent subjects in the INFO + PRACTICE group were significantly lower than innocent subjects in the other two groups. There were no significant differences among the guilty groups.

DISCUSSION

The results indicate a high degree of effectiveness of the CQ technique with naive subjects. This same effectiveness was noted for subjects who were

given extensive information about the CQ technique and possible countermeasures.

Thus, it would appear that access to materials concerning the PDD and the CQ technique does not diminish the technique's power to discriminate between guilty and innocent subjects. However, the effectiveness of the CQ technique was somewhat weakened with the combination of information, practice, and feedback, particularly for innocent subjects. It should be noted that the subjects in the INFO + PRACTICE group received their treatment in a manner designed to maximize the effectiveness of the treatment. That is, they received concise and pertinent information immediately before their practice tests, which were highly similar to the subsequent polygraph test. They then went directly to an examiner for another test on the same issue. In a field situation there would probably be a greater period of time between practice and the actual test, and this time lapse might dampen the effect of the training and practice. Furthermore, it is not likely that the two tests would be as similar as they were in this experiment. However, this is an issue which requires further research.

In a field situation it is conceivable that false positives and false negatives may be more likely to occur for subjects who have undergone training and practice procedures similar to those in the present study. However, there are practical considerations which might preclude a subject from receiving this training and practice. First, innocent subjects seldom seek such information and are more likely to produce a false positive outcome as the result of training and practice. Thus, it would be counter to their best interests to engage in those activities. Second, although the guilty subject's probability of producing a false negative outcome is increased by training and practice, the involvement of a competent polygraph examiner, and perhaps that of the subject's attorney, would be necessary. Since such activities would clearly violate the codes of ethics of both lawyers and polygraphers and might lead to criminal prosecution

of the examiner and attorney, it is unlikely that the participation of those parties would be readily available. Nevertheless, it may now be advisable for field examiners to include questions in pre-test interviews and polygraph examinations to attempt to determine whether a subject has had special training and practice in PDD techniques.

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