D28 Polygraph Testing and the Effect and Detection of Deliberate Manipulation of Physiological Data: An Assessment of the State of the Art in Polygraphy and in the Practice of the Forensic Sciences

Frank S. Horvath, PhD, School of Criminal Justice, Michigan State University, 512 Baker Hall, East Lansing, MI 48824*

After attending this presentation, attendees will learn what the available research reveals about the effect of physiological and psychological manipulations on polygraphic data when the Control Question Technique (CQT) is administered. The CQT is the most common approach to instrumental credibility assessment ("lie detection") in the
U.S. The emphasis in this session will be on presentation of polygraphic data showing how deliberate manipulations influence recorded signals and how readily available technologies enhance manipulation detection.

This presentation will impact the forensic community and/or humanity by demonstrating a better understanding of how polygraphy and practices in that field fit within general practices in the forensic sciences.

When polygraph testing is carried out using the CQT a subject's physiological responses to a set of "control" questions and a set of relevant (crime/event related) questions are compared in order to determine the subject's truthfulness. Simply stated, more consistent and pronounced responses to control questions than to relevant questions, leads to a decision of truthfulness whereas consistently greater responses to relevant than to control questions produces a decision of deception. Persons who are lying about relevant questions, however, may employ "manipulations" during a CQT to try to "beat the testing." This can be done in one of two ways. First, physiological responses to relevant questions may be suppressed, relative to control question responses. Second, physiological responses to control questions may be "artificially" enhanced. In either instance, the result is intended to show greater responses to the control than to the relevant questions in order to change the outcome from "deception indicated" to a "no deception" indicated result. This produces what is termed a false negative outcome, an actually deceptive person being reported as truthful.

The effectiveness of deliberate manipulations on CQT outcomes is not well established. Laboratory, "scripted event," studies reported to date have examined the effect of mental and physical manipulations. In one study, it was reported that 37% of the "guilty" subjects who were trained to use either pain or another physical activity, or both, were able to defeat the CQT. In addition, 25% of the guilty subjects in this study, who were specifically trained in the use of a specific cognitive activity were also able to defeat the CQT. In an earlier study, however, it was found that guilty subjects who were trained in the use of a "method acting" procedure were unable to alter the outcome of their CQT examination. In this study all "guilty" subjects were correctly detected.

Considered together, the available laboratory studies suggest that "guilty" subjects may avoid detection with the CQT if they have specific prior knowledge of the testing conditions and, importantly, if they are given intensive practice in applying specific manipulations. This is and has been, of course, a concern in the polygraph examiner community. And, it is seemingly even more important today. There are now sites on the World Wide Web, accessible to anyone with a computer, which post reasonably accurate information about polygraph testing and about methods that might be used to defeat specific applications of such "tests." Moreover, a recent report on Polygraphy by the National Research Council of the National Academy of Sciences highlighted the need for scientific scrutiny of the likelihood that polygraph testing outcomes may be affected by deliberate manipulations of examinees.

If examinees' efforts to manipulate polygraphic data can be readily detected it would be assumed that their effect would be minimized, perhaps even nullified. However, laboratory-based research suggests that attempts to detect deliberate manipulations of polygraphic data may be only moderately successful. This finding is in direct conflict with many anecdotal observations and some systematic, field-based reports of practicing polygraphists. Based on the data offered in this paper the weight of the evidence favors the position of field examiners.

In this presentation the research findings on the use and effects of manipulations of polygraphic data will be presented and discussed from two perspectives. The first of these is how such manipulations relate directly to the practice of polygraphy. The second, and the emphasized view, will be on how such research should be interpreted within the general context of the forensic sciences and the need for more rigorous assessment of forensic practices.

Polygraphy, Lie Detection, Credibility Assessment

 ** Presenting Author*