

A Case Study of the Validity of the Arther Examination Procedures in a Criminal Case With DNA Confirmation

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Abstract

We report a case study of the Arther Examination Procedures (AEP). The validity of the AEP was examined in the case records from a high profile actual innocence case. Through legal discovery at a retrial and subsequent civil action, materials from 27 AEP polygraph examinations were obtained. Of the 27 examinations, 21 resulted in conclusive opinions. Nine of the examinees were shown to be actually innocent by DNA exclusion. Of those nine examinations 4 were shown to be false positive errors. Statistical analyses show that the outcome pattern from these data closely match those of the only published study of the validity of the AEP (Horvath, 1974; 1977). The analyses also show that it is almost impossible that the data from this case were produced by a highly accurate polygraph technique. Examiners who use the AEP should consider retraining in one of the validated versions of the comparison question test.

Keywords: Arther Technique, Arther Examination Procedures, Polygraph Validity

Psychophysiological detection of deception (PDD) or polygraph tests are often used in a forensic setting as a credibility assessment tool. This application of the PDD can be referred to as an event-specific, specific issue, forensic, or investigative polygraph test. In the United States nearly all the polygraph tests of this type are conducted with one of the variants of the polygraph tests known as comparison question tests (CQT, previously known as the control question test). Although there are many named variations of the CQT in use the field scientific research has provided a set of standards for the way a scientifically validated CQT examination should be conducted (Raskin & Honts, 2002). Although there is variability in the estimates of the validity of the CQT, reviews of high quality field and laboratory studies converge at accuracy rates around 90% (Raskin & Honts, 2002; Honts, 2004, National Research Council, 2003.)

Scientifically validated versions of the CQT polygraph examinations (American

Polygraph Association [APA], 2011) proceed through a common series of structured phases. It is recommended standard practice for all forensic PDD examinations to be audio or audio-video (preferred) recorded (APA, 2013; American Association of Police Polygraphists, 2013; Raskin & Honts, 2002). A rapidly growing standard is developing for recording all forensic interviews (Lassiter, Ware, Lindberg, & Ratcliff, 2010). Recording of the entire examination allows for a complete review of PDD process and is a minimum requirement for a true quality control review of the examination.

The first phase of a polygraph examination is an introductory/general information phase where the examiner obtains informed consent to conduct the examination. The informed consent defines the nature and topic of the polygraph and specifies who will receive the results of the examination. If appropriate and/or required, a Miranda warning may be given at this time. The examiner then obtains some general

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information about the person to be examined. It is common to discuss the subject's health, education, and employment. The introductory/general information phase is brief and usually lasts 15 minutes or less. Part of the first phase is to allow the examiner to assess suitability of potential subjects to undergo testing. The American Polygraph Association (APA, 2012a) provides its members guidelines regarding the assessment of examinee suitability. Those guidelines are intended to protect examinees from undergoing examinations for which there is no potential benefit to themselves or the referring party. The suitability guidelines address such things as; psychosis, mean age equivalence, developmental delay, controlled substance or alcohol addiction, acute or chronic pain from underlying medical conditions, and physical exhaustion or fatigue. These guidelines caution examiners against attempting to generalize testing results to special subject populations, for whom there is limited empirical information.

The second phase of a properly conducted CQT is the free narrative in which the subject is asked to tell his or her story to the polygraph examiner. This is usually accomplished with an open ended question of the form, "Tell me how it is that you have come here today for a polygraph examination?" The free narrative is a non-confrontational information acquisition style interview during which the polygraph examiner should endeavor to refrain from interruption. Specific questions the examiner may have concerning details of the examinee's narrative are saved until the free narrative has ended. Because the length of the free narrative is under the control of the person being tested, its length is variable. Free narratives may last as little as 5 minutes while explanations of complex crimes such as business frauds may take longer to describe and explain, continuing for an hour or more. The examiner should display a friendly but neutral demeanor throughout the free narrative and in no way to attempt to interrogate the subject. Confrontational interviews of the subject just prior to the examination can have a detrimental effect on the test (Horvath, 1974). It is possible to sensitize a truthful subject to the test questions/issue itself, thus increasing the risk

of a false positive test result. ASTM (2012) standards caution against pretest interrogation and recommends delaying the exam until sufficient time has passed to allow any immediate sensitization to dissipate. During the free narrative, the examiner should evaluate all possible case alternatives and not form an opinion as to veracity. The scientific literature to date is very clear on this issue, there is no scientific support for veracity assessment based on informal interaction (Bond & DePaulo, 2006; Vrij, 2008).

Following the free narrative the examiner takes an active role in the examination and moves into the testing phase. The initial part of the testing phase includes a word for word discussion of the questions to be used in the test, a discussion of how the polygraph works and provides a description of the polygraph sensors. The introduction of the test questions is a critical part of the examination as the examiner must present the two types of critical questions properly for the test to be valid. The presentation of the questions follows from the theory of the CQT, which is as follows: The CQT assesses a person's credibility by looking for a differential reaction between two types of critical questions. The first type of critical question is known as a relevant question. Relevant questions are direct accusatory questions that address the issue under investigation (e.g., Did you shoot John Doe?). Relevant questions are worded so that they can be answered with an unambiguous "Yes" or "No" response. Relevant questions should be clear, concise and behaviorally descriptive of the issue under investigation. Terms that require interpretation are to be avoided in relevant questions and if they must be used, great care must be taken to operationally define all relevant question terms unambiguously. The examiner should enlist the help of the subject in developing the relevant question wording to ensure the intended meaning of the question is shared between examiner and subject.

Currently there are two validated approaches to the preparation and presentation of the second type of critical question (APA, 2011). Comparison questions can be presented as either a probable lie comparison (PLC) or as directed lie comparison (DLC) question. With PLCs, the

examinee is maneuvered by the examiner into denying transgressions usually related to those addressed by the relevant questions of the examination. For example, if the relevant questions address a theft of a gun, a PLC question might be, "Have you ever stolen anything from another person?" The subject is discouraged from admitting such transgressions by implying the actual thief would have a history of thievery. The social dynamic of the polygraph examination thus discourages the subject from making admissions and maneuvers him or her into probably lying, or to at least be uncertain about their answers, to the PLC questions. The rationale of the CQT is that the truthful subject will be more focused on, and will exert more mental effort when considering and responding to the PLC questions than when being truthful to the relevant questions. Truthful subjects are thus expected to produce larger physiological responses to comparison than to relevant questions (Offe & Offe, 2007; Raskin & Honts, 2002). It is further theorized that a deceptive subject will exert more mental effort and have greater focus on the relevant questions than the PLC questions because the relevant questions present a more immediate and focused threat than do the PLC questions. Subjects who are attempting deception to the relevant issues are thus expected to produce larger physiological responses to relevant than to comparison questions. There is a substantial body of laboratory and field research in the forensic setting that supports this rationale and the validity of the PLC version of the CQT (e.g. Honts, 2004; Raskin & Honts, 2002).

The DLC approach is a simpler and less manipulative approach in which the examiner instructs the subject to lie to questions similar in form to PLC questions (Honts & Raskin, 1988; Raskin & Honts, 2002). The subject is told that it is important for the examiner to observe appropriate physiological responses from the examinee whenever lying to the DLCs, otherwise the test will be inconclusive (Raskin & Honts, 2002).

The DLC approach offers advantages over PLC approach. The DLC approach is more standardization and requires less skill by the examiner to present the comparison questions. The use of PLCs may impede the

rapport building during the examination because the examiner has to confront the subject after they admit to any transgression, whereas this is unlikely to occur with DLCs. It has been suggested that during investigative interviews rapport is best fostered by displaying an open minded and non-confrontational demeanor (Shepherd, 2007). Non-naïve test subjects with prior polygraph experience or those who have researched polygraph techniques may be aware of the PLC procedures which could reduce their face validity in the examination and alter their role in the examination. It was for that very reason that DLCs were created for use in Government screening settings (Menges, 2004) where it was likely the subject had prior exposure to PDD testing. The rationale underlying the DLC approach is similar to that of the PLC and the same interaction of question type and guilt is expected. Although there is less scientific research on the DLC test, the existing data suggest it has equivalent validity with the PLC test (American Polygraph Association, 2011).

The later part of the testing phase should include a demonstration test, also known as an acquaintance test or stimulation test. The acquaintance test has the subject lie and tell the truth about some trivial items, such as what number they picked from a series while their physiological responses are monitored. The acquaintance test gives the examiner a chance to adjust the polygraph instrument to the individual subject's physiology, and it gives the subject a chance to experience, acclimate and habituate to the novelty of having his or her physiology monitored while answering questions. Research has generally shown a small but significant positive effect on CQT validity for the inclusion of an acquaintance test (Raskin & Honts, 2002).

In the later part of the testing phase the complete set of examination questions will be asked of the subject a minimum of three times and no more than five times while his or her physiological responses are recorded. Scientific research has clearly shown that valid conclusions cannot be made from a single presentation of the questions. In fact all of the non-outlier CQT variants reported in the APA meta-analytic review (APA, 2011)

included studies in which the test question stimuli were presented a minimum of three times. The acquaintance tests and physiological data collection are the only times during the examination that the person taking the test will have sensors placed on his or her person. Once the test data are collected, they should be evaluated using a test data analysis protocol that has been scientifically validated (APA, 2011; Raskin & Honts, 2002).

The final phase of a CQT is known as the post-test phase. During the post-test phase the results of evaluation are provided to the person taking the test and discussed. In some settings, if the person taking the test has produced deceptive results, the polygraph examination may transition into an interrogation, thus the length of the post-test can be highly variable. However, the portion of a polygraph examination that occurs before an interrogation rarely exceeds two hours.

The Arther Examination Procedures

The Arther method, also known as Arther's Examination Procedures (hereinafter, AEP) is a variation of the CQT family of polygraph tests. The AEP was taught at one polygraph school and that school lost its American Polygraph Association accreditation as an approved training facility in 1984. Although the present number of polygraph examiners using the AEP is not known, it seems certain that the number using the AEP has been declining for years. An example typical of the fate of the AEP in the polygraph profession is seen in the development of the polygraph training program at the Canadian Police College (CPC: Kaster, 2011). The CPC is the national training center in Canada for the Royal Canadian Mounted Police (RCMP) and for specialized forensic training for law enforcement from all of Canada. Until 1978 all RCMP polygraph examiners were trained in the AEP at The Arther School. However, in 1978, due to the well-known data on the invalidity of the AEP (Horvath, 1974; 1977), to the lack of a numerical scoring system, and to dissatisfaction by RCMP polygraph examiners, the RCMP abandoned the AEP (Kaster, 2011). Subsequent to 1978, no RCMP examiner received AEP training. The CPC began their own course of basic training for polygraph examiners in 1979. That program has since

become respected world-wide as one of the best forensic polygraph training programs in existence. The CPC has never offered instruction in the AEP. The United States Government's polygraph training program, founded in 1951, and known as the best general polygraph training program in the world, has never, to our knowledge, offered instruction in the AEP. Nevertheless, the AEP continues in use, and continues to be the subject of litigation in cases of miscarriage of justice involving the false conviction of the actually innocent (e.g., *The People of the State of New York v. John Kogut*, 2005; *Deskovic v. City of Peekskill et al.*, 2012) and in criminal cases (e.g., *Commonwealth of Kentucky vs Ronald Christopher Fairchild*, 2012).

The AEP includes a number of unique practices relating to the nature of the pretest interview, test question construction, test administration and scoring that do not fall within the scientifically validated standard CQT protocol described above. During the AEP pretest interview the examiner asks the subject a long series of questions designed to elicit verbal and non-verbal indices of deception (Arther, 2005). This aspect of the pretest interview is unsupported scientifically as there is no scientific evidence that supports the use of behavioral cues to detect deception (Bond & DePaulo, 2006). Any conclusions drawn from an analysis of behavioral cues will be without validity and could lead to examiner bias negatively affecting the validity of the examination. Furthermore, it is unknown how such an interview approach affects the test subject. It is quite possible that the extensive and odd behavior provoking questioning may sensitize the test subject.

The AEP includes what is known in the profession as a Guilt Complex Question (Arther, 1969; Horvath, 1974; Podlesny & Raskin, 1978). An example of AEP, Guilt Complex Question would be: "Did you personally tell Ralph Westphal you shot the victim?" According to the AEP the Guilt Complex Question should appear to the examinee as a relevant question but it asks about a fictitious person or issue and the subject's denial to the Guilt Complex Question is thus a known truth response (Ansley, 2009). Although there is no data to support it (APA, 2012b), some polygraph practitioners

express the belief that physiological responses to the Guilt Complex Question index a truthful person who as a function of their personality responds to accusatory questions in an apparently deceptive manner (Matte, 1996). Other practitioners believe that the Guilt Complex Question is functionally a comparison question (Arther, 2005). The little published scientific data on the Guilt Complex Question indicates that it can function as a comparison question, but that it is a very weak one (Podlesny & Raskin, 1978). Finally, the published literature on the AEP describes the collection of test data as generally being limited to two presentations of each stimulus target question (Horvath, 1974; 1977). Research shows that those techniques that produced high levels of accuracy use a minimum of three questions presentations (APA, 2011).

Finally, the AEP does not use one of the validated numerical scoring techniques described by the APA (2011). A scoring system for the AEP was claimed in testimony (Arther, 2005) but what was described was not a formal scoring system with measurement and score, it was a global scoring system that made note of impressions about the largest responses in the various channels (Arther, 2005). Global scoring has been scientifically shown to be inferior to numerical scoring in that global scoring results in a dramatic increase in false positive errors (see the review in: Raskin & Honts, 2002).

Scientific Research on the AEP

Despite the larger number of studies of the CQT, at present there is only one study of the validity of the AEP published in the peer-reviewed scientific literature. A field validity study of the AEP was conducted as Frank Horvath's doctoral dissertation (Horvath, 1974) and was subsequently published in a

peer-reviewed scientific journal (Horvath, 1977). Horvath reported that in cases conducted by a large state police agency by examiners who used the AEPⁱ (Horvath, 1974), the overall accuracy rate was only 63.3% with most of the errors occurring with individuals who were later confirmed to be innocent. With the innocent, the AEP was only accurate 51% of the time against a chance expectancy of 50%. Thus, the only existing scientific research on the AEP indicates that it is one of the CQT variants with the lowest scientific estimate of criterion validity.

The Present Case Study

The Crime

This crime description is adapted from material on the Innocence Project website (InnocenceProject.org, 2013) and the Centurian Ministries website (www.centurionministries.org, 2013). On November 10, 1984, Theresa Fusco disappeared after leaving her job at a roller rink at 9:45 p.m. About a month later, her body was found in a wooded area located a short distance from the roller rink. Forensic examination revealed that the victim died as a result of ligature strangulation. Moreover, vaginal swabs taken during the autopsy revealed the presence of semen and spermatozoa. Since the victim was not known to have ever had a boyfriend or any sexual history, the presence of semen was interpreted by the police as evidence that she had been sexually assaulted. However, serology tests to determine the semen donor's blood type were not performed at the time.

The Investigation

The case took on a very high media profile in the local area as there had been several other disappearances of young girls in area during the preceding years. The Nassau County Police Department investigation continued without much progress for months. During the investigation many young men

ⁱ Horvath (1974) notes that there were 10 examiners in his dissertation study. Eight of the 10 examiners were trained by Richard Arther and the other two were trained by Lynn Marcy. No significant differences were reported between the accuracy of the examiners. The overall average accuracy for the Marcy trained examiners was 62%. The overall accuracy for the Arther trained examiners examiners was 63.3%. The text of Horvath (1974) states that all the examinations were run using the same technique.

were interviewed. Twenty-seven polygraph examinations were scheduled and 21 of those examinations resulted in conclusive outcomes. Then in March 1985, John Restivo was interrogated for over 18 hours. During the interrogation, he mentioned John Kogut's name to police describing Kogut as a friend of a friend. Restivo made no inculpatory comments about Kogut. Several weeks later, 21-year-old John Kogut, a local landscaper, was brought in for questioning. Kogut had finished a day of labor intensive work, and at the time police picked him to bring him in, he had just finished drinking a couple of beers and smoking a marijuana cigarette. Police conducted a three-hour polygraph examination of Kogut using the AEP and then told him he failed the examination. Kogut's interrogation then continued for 15 hours during which he allegedly gave six varied confessions. In none of those confessions did the police develop any information about the death of Theresa Fusco that they did not already know. Neither the polygraph nor the 15 hours of interrogation was recorded. Though none of the alleged five other confessions were transcribed, the final confession was hand written by the interrogating officer for Kogut's signature. Subsequently, Kogut was then taken to the crime scene. Kogut was never able to point the police to any evidence from the crime that was missing, such as the victim's clothes, jewelry, or murder weapon. The next day, the sixth confession was recorded on video tape. According to the recorded confession, Restivo, Halstead, and Kogut were all in Restivo's van and approached the victim, who was on foot. After initially entering the van voluntarily, the victim later demanded to be let out of the van. At that time, she was stripped and raped by Halstead and Restivo. The three subsequently drove to a cemetery, where the victim was taken out of the van. Kogut then said that he strangled her with a piece of rope. The victim's body was then rolled into a blanket and dumped in another location. Based on Kogut's alleged confession, Restivo's van was searched, and several hairs were recovered and tested in a forensic lab.

The 1986 Trials

All three men were charged with rape and murder. Kogut was tried first, and Restivo and Halstead tried together after him. At the

original trials in 1985, the State's theory of the case was that the three men abducted and raped the victim in Restivo's van, and then murdered Teresa Fusco dumping her body not far from where they abducted her. Kogut testified that his confession was coerced and that he knew nothing about the murder. Besides the statements in Kogut's confession, the evidence against Halstead and Restivo consisted of jailhouse informants and acquaintances that had been arrested or had outstanding charges pending. The defense attempted to impeach those witnesses by saying that they lied to obtain favorable treatment. A forensic analyst testified that the two hairs found in the front passenger's seat were similar to those of the victim. Despite the fact that there was at the time and there still is not adequate empirical data to assign probabilities to hair comparisons, the analyst testified that there was a high degree of probability that the hair belonged to the victim. All three defendants offered alibi defenses. In May of 1986 Kogut was convicted and sentenced to 31.5 years to life. Restivo and Halstead were convicted in November 1986 and were then sentenced to 33 1/3 years to life.

Post-Conviction Investigation, Biological Evidence and Exoneration

According to the Innocence Project (2013) webpage, in 1994, Centurion Ministries began post-conviction work on behalf of all three defendants. The Innocence Project began working on Restivo's case in 1997. In the post conviction proceedings that secured the defendants' release, Kogut was represented by Wilmer, Cutler & Pickering. Halstead was represented by Pace Law School's Postconviction Clinic.

During a 10-year period repeated DNA analyses excluded all three of the defendants from having contributed to the samples found in the victim. The prosecution initially argued against the DNA exclusions, claiming that the samples tested (vaginal slides) were not adequate to detect semen from the defendants that should have been present on the original swabs. In 2003, using Police Department property records the Defense Team discovered an intact vaginal swab that had never been tested. Short Tandem Repeat (STR) DNA testing matched the previous analyses and

revealed that the spermatozoa on the vaginal swab matched the single unknown male profile from the prior testing and again excluded all three of the convicted men (Gootman, 2003; Innocence Project, 2013). Based on these and other questions concerning the evidence, the three defendants were released from jail in 2003, but the original charges were not dropped. The prosecutors decided to continue to a second trial of John Kogut in 2005.

The Second Trial

In 2005 John Kogut was tried for a second time for the rape and murder of Theresa Fusco. The State's case relied primarily on Kogut's confession. The State attempted to rebut the DNA exclusion by arguing that the victim, who was said by her mother and best friend to be a virgin, had consensual sex with an unknown male prior to her rape and murder. The defense argued that the confession was coerced and was allowed to call Dr. Saul Kassin to give expert testimony concerning scientific research on the factors that can cause innocent persons to confess to crimes they did not commit. For a current review of police practices that put the innocent at risk of false confession see the review by Kassin, Drizin, Grisso, Gudjonsson, Leo and Redlich (2010).

In support of their efforts to show that Kogut's confession was false, his defense retained one of us (Honts) to evaluate the materials from the original polygraph given to Kogut by the police. That polygraph was administered using the AEP, but the relevant questions were presented three times each in three separate charts. Honts evaluated the Kogut examination with the Utah Scoring System (Bell et al., 1999) and produced a total score of +26. Honts' potential testimony about that evaluation and the weaknesses of the AEP were offered in support of the false confession argument. Honts' (2005) argument was that since the Kogut polygraph actually indicated truthfulness to the relevant questions, telling Kogut that he failed the polygraph was effectively a false evidence ploy (Kassin, et al., 2010). False evidence ploys are so strongly associated with obtaining false confessions from the actually innocent that many in the scientific community call for the practice to be banned (Kassin, et al., 2010).

Honts was allowed to testify at trial about his analysis of the Kogut polygraph for that limited purpose (*The People of the State of New York v. John Kogut*, 2005). In December 2005, John Kogut was found not guilty at trial. Within days, all charges were dropped against Halsted and Restivo.

The Civil Suit

The former defendants then filed wrongful conviction cases which went to trial in 2012. Honts served as a consultant to the plaintiffs in that civil action. As a result of discovery, Honts was provided with records and files concerning the 27 polygraph examinations that were conducted as part of the Fusco Murder investigation. Unfortunately, during the period of time between Kogut's second criminal trial and discovery for the civil action, the polygraph charts for all of the examinations except Kogut's had gone missing. However, records were obtained showing examiners' conclusions. The civil trial concluded in the Fall of 2012. The jury found that the plaintiffs failed to legally demonstrate that the police had acted in culpably improper manner under the standards for that time (1984-1985).

New Analyses of the Polygraph Data in the Fusco Murder Investigation and the Validity of the AEP

Review of the discovery materials from the Fusco Murder Investigation indicated that 27 polygraph examinations were conducted. That review further indicated that all the examinations used the AEP method of testing. Of those 27 examinations, 21 resulted in conclusive opinions. Of the 21 subjects on whom examinations with conclusive opinions were conducted, nine were DNA excluded as having contributed to the samples taken from the victim. It is thus very likely that the nine examinees who were DNA excluded were actually truthful in responding to the relevant questions of their polygraph examinations.

The one available scientific estimate of the validity of the AEP (Horvath, 1974; 1977) is a field study that indicates the AEP to be only 51% accurate with actually innocent individuals. The results of the polygraph examinations from the Fusco investigation can be used to statistically examine deviations from the expected outcomes based on the

results of the Horvath (1977) study. Of the conclusive outcomes with the DNA excluded individuals, five produced truthful outcomes and four produced deceptive outcomes. The binomial distribution indicates that if we assume AEP accuracy with the actually truthful is 0.51, then the chance of observing five or fewer truthful outcomes in nine examinations is 0.73 (Stat Trek, 2013). Thus, the observed data are a likely outcome based on the research estimate of 51% accuracy with the actually truthful. However, if we were to assume that the AEP is highly accurate with all examinees as the proponents of the AEP suggest,ⁱⁱ say 95% accurate with the actually truthful, then the binomial distribution indicates the chance of observing 5 or fewer truthful outcomes in 9 examinations is only 0.00064, a very unlikely outcome under the proponents' accuracy estimates. The observed outcomes in the present case with DNA excluded examinees are well modeled by the Horvath (1974; 1977) estimate of 51% accuracy for the actually truthful, but they are very poorly modeled by a test that is 95% accurate with the actually truthful.

If we consider all 21 examinations from this case that had conclusive polygraph examination outcomes under the assumption that they were all actually truthful, the pattern of results is similar. Of the 21 conclusive outcomes 13 were truthful and 8 were deceptive. The binomial distribution indicates that if we assume that the AEP accuracy with the actually truthful is 0.51 then the chance of observing 13 or fewer truthful outcomes in 21 examinations is 0.88, a highly likely outcome. However, if we assume AEP accuracy with the actually truthful is 95% then the chance of observing 13 or fewer truthful outcomes in 21 examinations is 0.00000033, an extremely unlikely outcome. These statistical analyses strongly suggest that the polygraph examinations conducted in the Fusco Murder investigation were well modeled by the available scientific data that indicate that the

AEP is 51% accurate with the actually truthful.

Discussion

Although the Arther Examination Procedures have not been taught in an APA accredited school since 1984, use of the AEP continues and has been the focus of litigation in at least two high profile cases of the false conviction of the actually innocent (e.g., *The People of the State of New York v. John Kogut*, 2005; *Deskovic v. City of Peekskill et al.*, 2012) and in contemporary criminal cases (e.g., *Commonwealth of Kentucky v. Ronald Christopher Fairchild*, 2012). Nevertheless, after more than 40 years of use the AEP remains without empirical validation in the scientific literature. Moreover, it is given so little credence by the scientific community that it has not been mentioned in the major scientific reviews of polygraph validity during the last 20 years (Kleiner, 2002; National Research Council, 2003; Honts, 2004; Honts, Raskin & Kircher, 2005; Vrij, 2008). The AEP was not included as one of the validated CQT techniques in the recent APA review [2011; although the Horvath (1974; 1977) study was mentioned in an Appendix as the only study on the AEP].

The one published scientific study (Horvath, 1974; 1977) indicates that the AEP is only correct about half the time with innocent subjects. The present study confirms and extends the Horvath (1974; 1977) findings. Nine polygraph examinations were conducted with the AEP and were then confirmed to be from actually innocent individuals by DNA exclusion. Four of the nine DNA confirmed innocent polygraph subjects produced deceptive outcomes, for an accuracy with the actually innocent of 55.6%. This is a result very similar to the results of Horvath (1974; 1977) and reinforces the conclusion that the AEP is highly biased against the actually innocent.

ⁱⁱ Richard Arther (1976) the originator of the AEP claimed that his technique was 99.999% accurate. In the 1976 article he stated, "In fact, I have never made a known error and I have never heard of even one of my certified graduates making a known error when these two forms have been properly completed." p. 3. We felt that this claim was so absurd on its face that there was no reason to test it statistically.

After more than 40 years of application without scientific validation, the AEP as it was taught should now be viewed as anachronistic and invalid. The few examiners who continue

to use this outdated and inaccurate technique should take note of the scientific data and obtain retraining in a validated technique.

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