STATE OF SOUTH CAROLINA	)	IN THE COURT OF GENERAL SESSIONS
	)	
COUNTY OF HORRY	)	INDICTMENTS: 2010GS2602196, 2010GS2602195, 2008GS2604120
	)	
STATE OF SOUTH CAROLINA	)	WARRANT: J612054
	)	
VS.	)	***AMENDED***
	)	
	)	***ORDER ON POLYGRAPH MOTION***
	)	
	)	
ROBERT ANDREW PALMER DEFENDANT	)	

This matter comes before the court on the defense motion to introduce two polygraph examinations at trial.

Facts/Procedural History

In July of 2008 a seventeen month old boy was taken to Conway Medical Center with skull fractures. He died later that week at MUSC. Initially Julia Gorman was charged with homicide by child abuse and Robert Palmer was charged with unlawful neglect of a minor under the theory that he had knowledge that the child had injuries and failed to seek medical attention. In September of 2009, Mr. Palmer entered into a proffer agreement with the State. That proffer agreement contained a condition that Mr. Palmer subject himself to a polygraph examination.

Rick Charles of the South Carolina Law Enforcement Division performed that polygraph examination and was of the opinion that Mr. Palmer was not deceptive in his responses to the questions asked at that polygraph examination.

After meeting with the pathologists in this case and conducting further investigation, the State's theory of the case evolved based on medical evidence. In April of 2010, Mr. Palmer was indicted for homicide by child abuse and aiding and abetting homicide by child abuse.

In preparation for the trial of this case, the defense counsel made it known to the State that the defendant intended to introduce the results of the polygraph administered by Rick Charles at trial. In addition, the defendant retained Dr. Charles Honts as an expert, and Dr. Honts administered a second polygraph examination on Mr. Palmer in October of 2010. In this motion, the defense seeks to introduce both polygraph examinations at trial.

Law/Analysis

A. This court excludes polygraph evidence pursuant to Rule 702 and the Jones factors.

The Supreme Court addressed the admissibility of polygraph evidence in South Carolina Courts in State v. Council, 335 S.C. 1, 515 S.E. 2d 508 (1999). In Council, the Court declined to adopt a rule making polygraph results per se inadmissible. Id. Instead, the Court noted that polygraph evidence, while not admissible in that case, should be analyzed under Rules 702 and 403, SCRE, and the Jones factors. The Court also noted that historically, the Court consistently held the results of polygraph examinations are generally not admissible because the reliability of the tests is questionable. Council, 520 (citing State v. Wright, 322 S.C. 253, 471 S.E.2d 700 (1996); State v. Copeland, 278 S.C. 572, 300 S.E.2d 63 (1982)).

Before allowing the testimony of an expert witness, the trial court must exercise its gate keeping duty by making three preliminary findings which are fundamental to Rule 702. First, the trial court must find that the subject matter is beyond the ordinary knowledge of the jury, thus requiring an expert to explain the matter to the jury. Second, the trial court must find that that the proffered expert has acquired the requisite knowledge and skill to qualify as an expert in the particular subject matter. Finally, the trial court must evaluate the substance of the testimony and determine whether it is reliable. All three of these requirements must be met for expert testimony

to be properly presented to a jury. Watson v. Ford Motor Company, 389 S.C. 434, 699 S.E. 2d 169 (2010).

To determine the reliability of scientific evidence the Court considers several factors, including: 1) publications and peer review of the technique; 2) prior application of the method to the type of evidence involved in the case; 3) the quality control procedures used to ensure reliability; and 4) the consistency of the method with recognized scientific laws and procedures. State v. Jones, 383 S.C. 535, 681 S.E.2d 580(2009). South Carolina does not follow the standard set forth in Daubert v. Merrell Dow Pharmaceuticals, 509 U.S. 579 (1993). Jones, 587; State v. Council, 335 S.C. 1, 515 S.E. 2d 508, 518 (1999). Instead, South Carolina turns to its own rules of evidence, specifically Rule 702. Id. Jones provides clear instructions for the trial court:

> When admitting scientific evidence under rule 702, SCRE, the trial judge must find the evidence will assist the trier of fact, the expert witness is qualified, and the underlying science is reliable. The trial judge should apply the Jones factors to determine reliability. Further, if the evidence is admissible under Rule 702, SCRE, the trial judge should determine if its probative value is outweighed by its prejudicial effect. Rule 403, SCRE.

Rule 702, SCRE, provides specifically:

> If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.

This court has exercised its gate keeping duties as described in Watson, and held an evidentiary hearing before trial to determine the admissibility of polygraph evidence under Rule 702 and the Jones factors. In this two-day hearing, the defense moved to admit the results of two polygraph tests into evidence, while the State argued to exclude the results of the polygraph tests.

Each side presented two experts: one polygraph examiner and one academic to testify regarding the reliability of polygraph examinations and the administration of the polygraph examinations in this case. Per Watson, the court makes the following findings of fact:

1. This court finds that the subject matter is not beyond the ordinary knowledge of the jury. This subject matter does not require an expert to explain the matter to the jury. While the polygraph examination is technical, what the polygraph examination attempts to prove or disprove is well within the ordinary knowledge of the jury: the truthfulness or untruthfulness of a witness, defendant, or party. The American jury system is premised on the idea that the jury does not need any technical assistance or specialized knowledge to determine the truthfulness or untruthfulness of witnesses at a trial.

2. This court finds that all four proffered experts are imminently qualified in their fields and provided this court with valuable information and insight into the polygraph technique, science, and literature.

3. This court finds that polygraph examinations are unreliable under Rule 702 and the Jones factors.

Publications and Peer Review

While the court was presented with a plethora of publications and peer review of the technique, much of that peer review was negative towards the validity of polygraph evidence. This court finds persuasive that the National Academy of Sciences studied polygraph examinations to determine if the polygraph should be an accepted scientific practice[1] and found polygraph examinations to be unreliable as a tool to determine truthfulness. Further, this court is persuaded by State's expert, Dr. William Iacono's survey of two groups of scientists[2] which

[1] The Academy heard from both Dr. Honts and Dr. Iacono, the retained experts in this case.
[2] The survey itself was peer reviewed and published in *The Journal of Applied Psychology*.

found that most scientists surveyed believe that polygraph evidence is not theoretically sound, that claims of high validity for polygraphs cannot be sustained, that the polygraph examination can be beaten by countermeasures, and that polygraph evidence should not be admitted in a court of law.

Prior Application of the Method to the Type of Evidence Involved in this Case

The application of the polygraph to statements in order to determine truthfulness is not a novel concept. The method has existed since the 1940s. However, the context of the polygraph is important. Much of the literature focuses on the use of the polygraph in employment or national security settings. The literature that does exist regarding the use of polygraph in criminal settings often assumes that the polygraph will be used for investigative purposes to illicit a confession; a use that even skeptics of the polygraph agree is worthwhile. In the non-academic setting, polygraphs have been used in the criminal context and its application is not new or different in a way that would affect the admissibility of the evidence.

Quality Control Procedures Used to Ensure Reliability

While it is clear from the testimony that polygraph examiners are attempting to standardize the field to ensure reliability[3], I have heard no testimony that those efforts have been successful.

The development of both the test questions and the relevant questions used in a polygraph examination is highly subjective and dependent on the individual polygraph examiner. In addition the interpretation of the output data from a polygraph machine is highly subjective and

[3] The American Polygraph Association has created standards for the administration of polygraph examinations. In South Carolina, the State Law Enforcement Division licenses all polygraph examiners in the state. Computer programs have been developed to provide an objective reading of the data generated from a polygraph examination, though the testimony in this case indicated that the software is not widely accepted in the field.

in need of interpretation. The same set of data could lead one polygraph examiner to determine that the test was inconclusive, a different polygraph examiner to conclude that more testing was necessary, a different polygraph examiner to determine that no deception was indicated, and yet another polygraph examiner to determine that deception was indicated. The field has relied on context to interpret data, which adds another level of subjective determination and undercuts the reliability of the tool.

Given how highly subjective the examination is both in development of the test and in the interpretation of the results, two examination problems arise: the friendly examiner and the unethical examiner. Dr. Iacono testified that the problem of the friendly examiner is that the polygraph by its very nature measures various biological stress indicators. When a defendant takes a polygraph examination from a so-called friendly examiner (one who is paid by the defendant to administer the exam and possibly testify in court), the overall stress of the situation decreases because the defendant feels more comfortable in that situation than in an investigatory situation in a local law enforcement setting. In addition, if the friendly examination indicates deception, that information is never disclosed, so the defendant has nothing to lose in the friendly exam situation, and is more likely to erroneously pass the examination.

This court learned from the testimony of Rick Charles that the State Law Enforcement Division (SLED) licenses all polygraph examiners in the state of South Carolina. While that is an important step towards improving and standardizing the technique, Mr. Charles also testified that in order to become licensed, an individual must attend a training session accredited by the American Polygraph Association and must pay a fee. Mr. Charles testified that many of these classes are graded on a pass/fail basis and that licensure does not require any certain score or grade from the training session. In addition, Mr. Charles testified that once licensed, an examiner

only has to pay a fee to retain his or her license. While continuing education is offered in the state every year, it is not mandatory to maintain licensure. In fact, Mr. Charles admitted that once licensed, so long as a polygraph examiner is not convicted of a crime of moral turpitude and continues to pay the licensing fees, SLED may not revoke that persons license. As such, there is no protection against an unethical polygraph examiner, who accepts money from defendants to produce favorable polygraph examination results.[4]

Another problem with the reliability of polygraph evidence is the possible use of countermeasures to "beat" the polygraph. Dr. Honts has conducted several studies into countermeasures. According to the tesimony heard by this court, at worst, an individual can learn countermeasures to fool a polygraph examination in one thirty-minute session with a professional. It may be easier than that for some individuals, and could be as simple as googling the term "polygraph." In fact, this court learned that the individual who owns the domain name *polygraph.com* has written an accurate manual with instructions on how to produce inaccurate results on an polygraph exam. This individual also offers services over the phone and in person to train potential polygraph examination takers to beat the test. This court finds the ease and availability of these countermeasures extremely troubling, and the idea that a defendant is too sheltered or uninformed to discover these resources on countermeasures is naive at best.

Additionally, a defendant may use a process called rationalization to invalidate any accuracy of the polygraph examination. Dr. Iacono testified that rationalization is where a defendant convinces himself that certain facts about the crime are not true as a way to not produce a biological response to incriminating questions while taking the polygraph

[4] There is no allegation or reason to believe that either party engaged in unethical polygraph examination procedures in this case. In fact, both sides were too polite to raise this as a possible problem with the reliability of polygraph examinations. However, upon the Court's examination, Dr. Iacono discussed the issue in the hypothetical context.

examination. For example, if a defendant is asked, : "Did you inflict the injuries to the child that resulted in his death?" the defendant may believe that even though he inflicted some injuries, they did not result in the child's death, even though pathologists will testify otherwise.

Finally, the court finds no mechanism to ensure the reliability of the instruments used to measure the biological responses during a polygraph examination. Every mechanized instrument that our criminal courts rely on for scientific evidence has a mechanism for calibration, and some sort of alarm or sensor or warning light or test to determine if the instrument is not properly calibrated. The testimony in this hearing indicated that polygraph examinations rely on software on a laptop computer. The examinee is hooked up to various measuring instruments that transmit data to a box. That box converts the data from analogue to digital information, and transmits the digital information to the laptop computer. There is no standard for how to calibrate the instrument, how often to calibrate the instrument, or how to determine if the instrument is not properly calibrated. This lack of calibration mechanism mitigates the reliability of this scientific device and makes it inappropriate for admission in court.

Consistency of the Method with Recognized Scientific Laws and Procedures

Dr. Iacono expertly testified regarding problems with the underlying science behind the polygraph examination. This court is persuaded by his testimony that the entire polygraph examination is based on a set of untested assumptions: 1) that individuals reliably and consistently have a measurable biological stress response when making untruthful statements; 2) that an examiner can establish a "normal" range of these biological responses through a series of test questions 3) that an examiner can establish the "untruthful" range of biological responses through either a directed lie (the defendant is told to lie on a question) or a presumptive lie (the defendant is asked a question that he will likely not answer truthfully) and; 4) that the biological

stress responses measured by the polygraph examination are due to untruthfulness, not to stress of the interrogation setting or stress of the circumstances surrounding the crime. While defense counsel through Dr. Honts presented numerous papers and articles regarding polygraph examinations, none of them tested these basic assumptions. Dr. Iacono testified that these assumptions have never been tested in a reliable and replicable way.

Dr. Honts testified about several studies that sought to prove the reliability of the polygraph examination as a reliable and valid scientific method. Dr. Iacono testified regarding problems with the scientific procedures used in those studies. The field relies on two types of studies: laboratory studies and field studies.

Laboratory studies use volunteer subjects, often on college campuses, and create fictional situations that necessitate the subject making an untruthful statement. The polygraph is then used to measure such known untruthful statements. Dr. Iacono astutely observes that such studies lack scientific merit because they fail to create situations that closely mirror real applications of the polygraph. In real applications of the polygraph, stakes and emotions run high. The individual taking the polygraph is usually facing prison time, often even life in prison or the death penalty. The circumstances surrounding the polygraph in real applications of its use often involve high stress because the defendant, even if innocent, has experienced some major tragedy relating to the crime. To test the polygraph on college students who are told to steal a movie ticket from a desk drawer then lie about it is simply not an accurate test of the scientific credibility of the tool.

The second type of study offered to validate the use of polygraphs is the field study. In the field study, researchers look at polygraphs that have already been administered that have been confirmed as accurate or inaccurate based on other criteria. Most often, the other criteria used are confessions. Dr. Iacono accurately detailed that the problem with these studies is that

they are self selecting. By using confession as the only means by which the polygraph can be confirmed or not confirmed, the only polygraphs that make it into the field study are those that can be confirmed as accurate. Additionally, because field studies rely on polygraphs that have already been administered, they are not blindly scored. Polygraph examiners are often taught to take into account all circumstances of the case when scoring the polygraph examination. There is no opportunity for multiple scorers to score the exams completely blind, i.e., based only on the charts of biological responses produced by the examinee. For these reasons, the field studies are not produced in a method consistent with recognized scientific laws and procedures and are therefore not sufficient to rely on as a measure of the reliability of the polygraph examination.

When considering all four Jones factors regarding the reliability of polygraph evidence, this court finds that the evidence is not scientifically valid or reliable. Further, the court notes that in Council this state's Supreme Court noted that polygraph evidence has been historically inadmissible because of its unreliability. The Court also noted that as of the writing of that opinion, no scientific advancements had been made to make polygraph evidence more reliable such that it could be admissible in court. Council, 520 This court notes that it examined each of the experts in this matter regarding recent advancements in polygraph science, and each one answered that there had been no changes in the science or breakthroughs in the instruments since the Council decision in 1999.

B. This court excludes polygraph evidence in this case because of testing irregularities.

Notwithstanding the findings in section A of this order, this court finds that even if polygraph evidence were scientifically reliable such that it could be admitted in courts of this state, the administration of it in this context was so unreliable that it would not assist the jury.

The first polygraph examination administered by Rick Charles was administered in a context where Mr. Palmer was charged with unlawful neglect of a child under the theory that he did not seek medical attention. He is now charged with murder and homicide by child abuse as the principal in this crime. The questions in that first polygraph examination all dealt with his level of knowledge regarding injuries to the child, not who inflicted those injuries.

Throughout the administration of the polygraph by Rick Charles, he refers to the victim as "the child." Mr. Palmer has a child of his own who is not the victim in this case. Therefore referencing the victim as "the child" creates the opportunity for the defendant to conduct the rationalization that he is answering with regard to another child, which would invalidate the test. In fact, Richard Keifer, a polygraph examiner for the Federal Bureau of Investigation testified that he thought it was improper to refer to the victim as "the child" and that the victim should have been referred to by name.

Additionally, that polygraph was given as an investigatory polygraph examination, not an evidentiary polygraph examination. The American Polygraph Association standards dictate that evidentiary polygraph examinations be videotaped. This one was not. As such, it would be inappropriate for admission at trial.

The second polygraph examination also suffered from fatal flaws that would impact its admissibility at trial. First, it was a "friendly examiner" test. Dr. Iacono testified that such tests are unreliable because they are conducted in less stressful situations. The exam was conducted by someone paid by the defendant, it was not conducted in the law enforcement interrogation context, and if the defendant had been deceptive on the polygraph, it would never have been disclosed, so the defendant had nothing to lose.

Dr. Honts also interchanged the words hit, strike, and shake when asking the relevant questions regarding Mr. Palmers actions towards the child. Dr. Honts seemed to think that the difference between these three was immaterial, but the difference between hitting or shaking a seventeen month old is marked, and the interchanging of those words invalidates any results of the examination.

Additionally, Dr. Honts testified that of the four relevant questions in the polygraph examination, the defendant responded strongly to one of them. Dr. Honts discounted that strong response as being an impossible lie given the responses in the other three relevant questions, a subjective determination. Additionally, Dr. Honts elected to run more tests until he could get results that were consistent with each other. This process of running more tests did not conform with the American Polygraph Association standards of practice. In addition, Mr. Keifer, when viewing the same results, indicated that he would have found deception in the responses to the relevant question. Given that two such imminently qualified polygraph examiners cannot agree on the outcome of this exam, its admission would likely only confuse the jury.

C. This court excludes polygraph evidence pursuant to Rule 403.

Notwithstanding the exclusion of polygraph evidence as inadmissible pursuant to Rule 702 and the exclusion of the polygraph evidence as unreliable and inconclusive in this particular case, this court finds that the polygraph evidence should be excluded because its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, and misleading the jury.

The defense seeks to introduce the polygraph evidence to help the jury determine whether witnesses had made truthful statements. In fact, the layperson's terminology for a polygraph is a "lie detector."

The standard jury instruction form book created by the South Carolina Judicial Department, and distributed each year to every Judge in the state provides a set of standard jury instructions for use in criminal trials in this state. This book provides a jury instruction on the evaluation of the credibility of witnesses which instructs jurors that they are the sole judge of the credibility of witnesses in a case:

> NECESSARILY, YOU MUST DETERMINE THE CREDIBILITY OF WITNESSES WHO HAVE TESTIFIED IN THIS CASE. CREDIBILITY SIMPLY MEANS BELIEVABILITY. IT BECOMES YOUR DUTY AS JURORS TO ANALYZE AND TO EVALUATE THE EVIDENCE AND DETERMINE WHICH EVIDENCE CONVINCES YOU OF ITS TRUTH.
>
> IN DETERMINING THE BELIEVABILITY OF WITNESSES WHO HAVE TESTIFIED IN THIS CASE, YOU MAY BELIEVE ONE WITNESS OVER SEVERAL WITNESSES OR SEVERAL WITNESSES OVER ONE WITNESS. YOU MAY BELIEVE A PART OF THE TESTIMONY OF A WITNESS AND REJECT THE REMAINING PART OF THE TESTIMONY OF THAT SAME WITNESS. YOU MAY BELIEVE THE TESTIMONY OF A WITNESS IN ITS ENTIRETY OR REJECT THE TESTIMONY OF A WITNESS IN ITS ENTIRETY. YOU MAY CONSIDER WHETHER ANY WITNESS HAS EXHIBITED TO YOU ANY INTEREST, BIAS, PREJUDICE, OR OTHER MOTIVE IN THIS CASE. YOU MAY ALSO CONSIDER THE APPEARANCE AND MANNER OF A WITNESS WHILE ON THE WITNESS STAND.

I find that the introduction of polygraph evidence would confuse the jury as to its role in the evaluation of the truthfulness and credibility of witnesses. The introduction of polygraph evidence in this case would mislead the jury as to the weight of any one statement the polygraph would seek to affirm. This finding is independent from the findings in other sections of this order.

D. This court excludes polygraph evidence as a matter of public policy.

Notwithstanding and independent from the reasoning in sections A, B, and C of this order, this court finds that polygraph evidence should be inadmissible as a matter of public policy and for judicial efficiency. The admission of polygraph results in a court of law has the

potential to open the flood gates of prisoner litigation. Polygraph examinations have been used for investigatory purposes in law enforcement contexts in this state in many cases, and a finding that they are now admissible in court would likely lead to every defendant who has taken a polygraph examination attempting to either get the results of that polygraph examination admitted, or attempting to have another polygraph examination administered. Given the limited utility of the polygraph examination, such results seem disproportionate to the usefulness of the tool.

Additionally, any future litigants may have the right to demand a polygraph examination, and if indigent, it would be at the cost of the state. Given the potentially high monetary cost, the potential for massive amounts of litigation on old cases, and the low reliability and utility of the polygraph examination, this court finds that polygraph examinations are inadmissible in court.

FOR EACH OF THE ABOVE REASONS, ALONG WITH THE TESTIMONY TAKEN AND BRIEFS SUBMITTED, THE DEFENDANT'S MOTION TO INTRODUCE THE RESULTS OF TWO POLYGRAPH EXAMINATIONS IS DENIED.

IT IS SO ORDERED.

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Larry B. Hyman Jr.
Circuit Court Judge
15th Circuit

_____, 2011

Conway, South Carolina