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Speak the Truth and Tell No Lies: An Update for the Employee Polygraph Protection Act

David Barnhorn

Joey E. Pegram

NOTES

SPEAK THE TRUTH AND TELL NO LIES: AN UPDATE FOR THE EMPLOYEE POLYGRAPH PROTECTION ACT

I don't know much about polygraphs, and I don't know how accurate they are, but I do know they scare the hell out of people.

-Richard M. Nixon[1]

I. INTRODUCTION

As a society and as human beings, we are inherently fascinated with uncovering the unknown, especially when it involves what those around us are thinking – how they feel about us, what they are planning next, and most importantly, whether or not they are lying.[2] This idea manifests itself from the esoteric, with a vast number of superheroes[3] and book characters possessing telepathic powers, to the concrete, with man's attempt to make this nagging desire a reality in the form of a lie-detector machine. As one journalist puts it "[t]here is something disconcerting about the fact that we can map the human genome and land a robot on Mars, but we still can't say for sure whether someone is trying to pull the wool over our eyes."[4]

1. Paul D. Seyferth, *An Overview of the Employee Polygraph Protection Act*, 57 J. MO. B. 226, 226 (2001).

2. While the general public seems to disfavor the polygraph and its progeny, it is still fascinated by such devices. *See* Leo Kittay, Note, *Admissibility of fMRI Lie Detection: The Cultural Bias Against "Mind Reading" Devices*, 72 BROOK. L. REV. 1351, 1394 (2007).

3. William Marston, one of the early inventors of the polygraph, is the creator of the comic book character Wonder Woman. Dina Temple-Raston, *Foolproof Test for Catching Liars Still Elusive*, NPR (Oct. 29, 2007), http://www.npr.org/templates/story/story.php?storyId=15670581. In the comic, Wonder Woman wielded a magic lasso that had the power to make people tell the truth. Frederick Schauer, *Can Bad Science Be Good Evidence? Neuroscience, Lie Detection, and Beyond*, 95 CORNELL L. REV. 1191, 1196 (2010).

4. Temple-Raston, *supra* note 3.

In 1988, Congress passed the Employee Polygraph Protection Act ("EPPA") to restrict the startlingly high use of lie detection devices in the workplace.[5] While this law did much to combat the use of these inaccurate devices, the codified exemptions in the law left many individuals, namely public sector employees, unprotected. In addition to these gaps in the legislation, new and increasingly intrusive technology is being marketed as a lie detection device. These shortcomings and technological advancements urgently require a change in the EPPA's statutory framework. The purpose of this Note is to outline the changes necessary to cure the current weaknesses in the EPPA and bring it up to date. Section II describes the history of the polygraph itself as well as the EPPA. Section III outlines the current statutory provisions and the corresponding regulations of the EPPA and discusses the law's exemptions in detail. Section IV explores functional magnetic resonance imaging ("fMRI"), a medical scan similar to an MRI that is being touted as the newest form of lie detection. Lastly, Section V proposes amendments and modifications to the EPPA to update the law and ensure its continued effectiveness.

II. HISTORY OF THE POLYGRAPH AND THE EMPLOYEE POLYGRAPH PROTECTION ACT

A. The Origin and Evolution of the Polygraph

On July 30, 1925, Leonarde Keeler filed a patent application with the United States Patent and Trademark Office ("USPTO") for his invention, "Apparatus for Recording Arterial Blood Pressure."[6] In his specification, Keeler noted that while his invention had medical uses, this particular set up was also capable of being used in psychological evaluations, particularly those occurring during criminal investigations by police.[7] The USPTO granted Patent number 1,788,434, to Keeler on January 13, 1931, distributing, for the first time, rights to a machine purported to detect lies.[8]

While Keeler, a Berkeley, California police officer, is frequently credited with being the father of the polygraph, he was not the first to

5. Charles P. Cullen, *The Specific Incident Exemption of the Employee Polygraph Protection Act: Deceptively Straightforward*, 65 NOTRE DAME L. REV. 262, 273 (1990).

6. U.S. Patent No. 1,788,434 (filed July 30, 1925).

7. '434 Patent col.2 l. 109-13, col.3 l. 17-19.

8. *See* '434 Patent; Temple-Raston, *supra* note 3.

develop lie-detecting technology.[9] In 1895, Italian psychiatrist and criminologist, Cesare Lombroso, declared that he could ferret out when someone was lying simply by monitoring the fluctuations in the person's blood pressure.[10] This same concept was put forth in the United States in the 1910s by Harvard psychologist William Marston.[11] Marston contended that a person's systolic blood pressure could indicate deception, rising in a curve if the person was lying during an examination.[12]

The modern polygraph still focuses on medically detectable physiological responses, but has been somewhat updated since the time of Lombroso, Marston, and Keeler. For example, in 1951, the USPTO issued Patent number 2,538,125 to John E. Reid for his polygraph, which differentiated itself from the prior art by adding a gauge of muscular activity to the commonplace blood pressure, pulse cycle, and respiration measurements.[13] A typical polygraph machine today includes a number of medical devices.[14] The machine first uses a sphygmograph, a cuff that is placed around the examinee's upper arm, to monitor changes in blood pressure.[15] Next, the machine monitors changes in breathing patterns through pneumograph tubes that are wrapped around the upper and lower portions of the chest.[16] Finally, two electrodes are attached to the index and middle fingers in order to record any changes in skin perspiration.[17] The readings from these devices create four separate graphs, two reflecting respiration, a third showing heartbeat, pulse rate, and blood pressure, and a fourth indicating increases or decreases in perspiration.[18] After the examination period is complete, the examiner evaluates the print-out from the machine to determine whether or not the examinee was lying and, if so, in response to which questions.[19]

9. Temple-Raston, *supra* note 3.

10. Michael Tiner & Daniel J. O'Grady, *Lie Detectors in Employment*, 23 HARV. C.R.-C.L. L. REV. 85, 86 (1988). Lombroso is also known for his contention that criminals could be distinguished from law-abiding citizens through certain physical characteristics. *Id.*

11. Temple-Raston, *supra* note 3.

12. *Id.*

13. U.S. Patent No. 2,538,125 col.1 l.4-7 (filed Nov. 19, 1945).

14. Tiner & O'Grady, *supra* note 10, at 85-86 & n.2.

15. Seyferth, *supra* note 1, at 226.

16. *Id.* at 227.

17. *Id.*

18. *Id.*

19. *Id.*

B. Polygraph Examination Techniques

From popular culture depictions of polygraph testing, such as Robert De Niro's examination of Ben Stiller in Meet the Parents,[20] an average person may conclude that an examiner simply asks a list of questions he feels is pertinent to uncovering the truth. In reality, examiners generally use one of three methods to administer a test: the relevant/irrelevant ("R/I") test, the control question test, and the concealed knowledge test.[21] The R/I test, the first test created,[22] was the most commonly used by private sector employers for pre-employment screenings before the enactment of the EPPA.[23] During the R/I test, the examiner asks a variety of questions, both relevant and irrelevant to the subject at hand.[24] The theory behind this technique is that a person who is lying responds differently to relevant questions than to neutral, unrelated questions, and that this response is picked up physiologically through the polygraph.[25] In the converse, if the examinee is having the same response to all questions, it is determined he is being truthful.[26]

The control question technique, most commonly used in criminal investigations, builds off of the R/I method, adding various "control" questions to the mix.[27] The control questions generally touch on a variety of different situations or topics that most examinees have encountered within their lifetimes.[28] Control questions are administered for a number of reasons; for example, innocuous questions give the examiner a baseline from which to evaluate responses to relevant questions.[29] Other control questions investigate the examinee's past in order to "determine whether the subject shows a pattern of behavior which indicates he is the type of person who will commit the act in

20. *See* MEET THE PARENTS (Universal Pictures and Dreamworks LLC 2000).

21. Peter C. Johnson, Comment, *Banning the Truth-Finder in Employment: The Employee Polygraph Protection Act of 1988*, 54 MO. L. REV. 155, 157 (1989).

22. *Id.*

23. S. REP. NO. 100-284, pt. 3, at 42 (1988).

24. *Id.*; Johnson, *supra* note 21, at 157. An irrelevant question may consist of something as simple as what the examinee had for lunch that day. Irrelevant questions are usually innocuous and do not pry deeply into the life or background of the examinee.

25. S. REP. NO. 100-284, at 42; Johnson, *supra* note 21, at 157.

26. S. REP. NO. 100-284, at 42; Johnson, *supra* note 21, at 157.

27. S. REP. NO. 100-284, at 42; Johnson, *supra* note 21, at 157. The control question method builds off the R/I method in that both methods attempt to establish a base by asking certain questions. However, each test formulates its base with different types of questions. *See id.* at 157-58.

28. S. REP. NO. 100-284, at 42; Johnson, *supra* note 21, at 157.

29. S. REP. NO. 100-284, at 42; Johnson, *supra* note 21, at 157.

question (i.e., stealing from an employer)."[30] Overall, the examiner analyzes the test results using a numerical scoring system, comparing answers to control questions with answers to relevant questions.[31] If an examinee has stronger responses to relevant questions than to control questions, it is determined that he is being deceptive.[32]

The final method, the concealed information technique, is also known as the guilty knowledge test.[33] During a concealed information polygraph test, the examiner inserts a number of questions where it is presumed only someone involved with the specific incident being investigated would have knowledge of the event or realize the importance of the questions.[34] It is postulated that a person with no "guilty knowledge" of the incident would respond the same to all questions, leaving no hiccups on the polygraph chart.[35] On the other hand, a person who was involved in the incident would have a physiological reaction to the questions, visibly leaving the evidence of his deception on the print-out.[36]

C. Problems with the Polygraph and Its Entry into the Legal System

There is very little debate over whether a polygraph's instruments take accurate readings of an examinee's physiological changes.[37] However, unearthing which emotional response the recorded physiological changes reflect is where the problem of a polygraph's validity and accuracy begins to emerge. A variety of feelings and psychological states such as fear, anxiety, shame, embarrassment, shock, anger, and resentment can all show up as identical changes on a polygraph read-out.[38] A majority of experts disagree with the popular perception that a polygraph is a lie-detector. They feel that while the machine can indicate stress in the examinee, both the machine and the examiner are incapable of stating with certainty what caused that stress.[39]

The process of administering the polygraph examination is one of

30. Johnson, *supra* note 21, at 157.
31. S. REP. NO. 100-284, at 42; Johnson, *supra* note 21, at 157.
32. S. REP. NO. 100-284, at 42.
33. Johnson, *supra* note 21, at 158.
34. *Id.*
35. *Id.*
36. *Id.*
37. S. REP. NO. 100-284, at 41.
38. *Id.*
39. *Id.* at 41-42.

the many problems inherent in the system. Some organizations such as the American Polygraph Association try to reduce the potential for inaccuracy in their examinations by having a Code of Ethics.[40] Some individual polygraph examiners, like former New York Police Department investigator and polygrapher, Bill Majeski, have their own personal code of ethics.[41] Majeski states "I will never do a polygraph test if a person is in a high state of anxiety."[42]

While some examiners strive to administer ethical examinations, problems still arise both unintentionally and through significant abuses. The polygraph examiner can affect the results of the test substantially.[43] The test administrator's expertise can make a world of difference in six areas, including "(1) determining the suitability of the subject for testing, (2) formulating proper test questions, (3) establishing the necessary rapport with the subject, (4) detecting attempts to mask or create chart reactions, or other countermeasures, (5) stimulating the subject to react, and (6) interpreting the charts."[44] One of the most common ways for an examiner to affect the outcome of the polygraph is by acting overly intimidating.[45] If an administrator is suspicious of the examinee, he may engage in overt or covert methods to affect the results, creating a false-positive.[46] One polygraphist noted his feelings on the subject stating that the polygraph was "'the best confession-getter since the cattle-prod.'"[47]

Besides having an overly intimidating demeanor, an examiner can also affect the scales through the set of questions he uses.[48] Questions can run the gamut from general questions about the examinee's family and what car he drives, to more invasive questions about sexual preferences, political beliefs, and intended length of stay at his current job.[49] Prior to the implementation of the EPPA, one examinee discussed a test he was subjected to with the Labor-Management Subcommittee of the House Committee on Education and Labor, stating:

40. *See* Am. Polygraph Ass'n, *Code of Ethics*, AM. POLYGRAPH ASS'N, http://www.polygraph.org/section/about-us/code-ethics (last updated Jan. 10, 1999).

41. *See* Temple-Raston, *supra* note 3.

42. *Id.*

43. Kittay, *supra* note 2, at 1368.

44. *Id.* at 1368-69 (citing Paul C. Giannelli, *Polygraph Evidence: Post-Daubert*, 49 HASTINGS L.J. 895, 905 (1998)).

45. Kittay, *supra* note 2, at 1362.

46. *Id.*

47. S. REP. NO. 100-284, pt. 3, at 42 (1988).

48. *See* Tiner & O'Grady, *supra* note 10, at 87-88.

49. *Id.*

> And so he asked me also if I liked extramarital sex, and I again told him this was none of his business. Before he could jump in and interrupt me and tell me just to answer yes or no, I told him, "Well I guess I don't have a girlfriend, so I guess I'm not involved in extramarital sex!" His attitude was a little hostile. And he told me that it was up to him whether I was hired or not . . . .[50]

Besides for the type of questions asked, it has also been suggested that the order in which the questions are being asked may affect the test taker, producing unintended reactions and results.[51]

While the behavior of the examiner and the questions he uses can affect the outcome of the polygraph, other factors outside of the examiner's control, such as certain characteristics of the examinee, can affect the exam's results.[52] The examinee's position within the company or agency might even have an effect on the polygraph's results.[53] Companies and agencies that test their employees with some frequency tend to find that most senior-level employees have no trouble passing polygraph examinations.[54] Lower and entry-level employees, however, are a different story, with anywhere from 30 to 40% failing the examinations.[55] Many, like University of Minnesota psychologist William Iacono, attribute this to a sort of reverse intimidation.[56] To demonstrate this idea, Ianoco uses the example of giving a test to the director of the CIA, stating "[h]ow would you like to be the examiner who gave him a test and say he failed? What kind of a career would you have?"[57]

Before any of the previously mentioned problems and concerns with the polygraph were thoroughly investigated or studied, individuals began trying to use results of polygraph examinations in court as bona fide evidence of the truth.[58] The first appellate court to entertain the use of a purported lie detection machine was the D.C. Circuit in its landmark case, *Frye v. United States*.[59] Frye was a man who had initially

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50. *Id.* at 88 (citing Pressure in Today's Workplace: Hearings Before the Subcomm. on Labor-Mgmt. Relations of the H. Comm. on Educ. & Labor, 96th Cong., 2d Sess. 40 (1980)).

51. Kittay, *supra* note 2, at 1369.

52. *Id.*

53. *Id.*

54. *Id.*

55. *Id.*

56. *See* Dan Eggen & Shankar Vedantam, *Polygraph Results Often in Queston: CIA, FBI Defend Test's Use in Probes*, WASH. POST (May 1, 2006), http://www.washingtonpost.com/wp-dyn/content/article/2006/04/30/AR2006043001006.html.

57. *Id.*

58. *See* Frye v. United States, 293 F. 1013 (D.C. Cir. 1923).

59. *Id.*; James R. McCall, *Misconceptions and Reevaluation—Polygraph Admissibility after*

confessed to a murder, but then recanted his story, claiming his innocence.[60] In order to prove his original confession disingenuous and that he was in fact innocent, Frye submitted to a "primitive version" of a polygraph, which measured the fluctuations in his blood pressure.[61] Frye's counsel first offered to have the examiner testify as an expert about the results of the test, espousing the defendant's innocence since Frye had passed the test.[62] When this request was denied, the attorney further offered to conduct a test on the defendant in the presence of the jury.[63] This request was also denied.[64] In its review of the district court's decision, the D.C. Circuit proffered what was to become the general rule for the admittance of scientific evidence for years to come. The court recognized that for scientific evidence to be admitted, it "must be sufficiently established to have gained general acceptance in the particular field in which it belongs."[65] Applying this standard, the court found that the systolic blood pressure deception test used in Frye's case had not yet received enough recognition in the scientific community to find acceptance in the legal community.[66] While *Frye* did not completely ban the use of deception-detection machines in a courtroom setting, it acted as a bar for over forty years, continuously being cited as the authority for the inadmissibility of the polygraph.[67]

D. The Call for and Creation of the Employee Polygraph Protection Act

1. Prevalance of the Polygraph before the Implementation of the EPPA

Even though the polygraph and its counterparts did not receive the warmest reception in the courtroom, businesses, agencies, and organizations, public and private, felt the polygraph could be an important and useful tool in a number of areas.[68] Many businesses and government agencies came to realize that, even though a polygraph can

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Rock and Daubert, 1996 U. ILL. L. REV. 363, 366 (1996).

60. Brian R. Gallini, *Police "Science" in the Interrogation Room: Seventy Years of Pseudo-Psychological Interrogation Methods to Obtain Inadmissible Confessions*, 61 HASTINGS L.J. 529, 567 (2010).

61. *Id.*

62. *See Frye*, 293 F. at 1014.

63. *Id.*

64. *Id.*

65. *Id.*

66. *Id.*

67. McCall, *supra* note 59, at 368.

68. *See* Seyferth, *supra* note 1, at 227.

be inaccurate in diagnosing whether an employee or potential employee is lying, "the real utility of the polygraph machine . . . is that many of the tens of thousands of people who are subjected to it each year *believe* that it works—and thus will frequently admit to things they might not otherwise acknowledge during an interview or interrogation."[69]

The 1980s saw a large increase in the amount of polygraph tests administered to employees and applicants.[70] It was estimated in 1984 that somewhere between two hundred thousand and one million polygraph examinations were administered to job applicants and employees.[71] Only four years later in 1988, this number had jumped to an approximate two million examinations annually,[72] with nearly 70% of those being administered pre-employment.[73] What may have been the most disconcerting is that only 15% of the tests administered were used for the legitimate purpose of investigating a specific incident in the workplace.[74]

With polygraph use on the rise, many states took initiatives to ban or curtail its use. By 1988, only seven states had failed to enact some form of ban or regulation on the use of polygraphs.[75] Twenty-one states, making up the majority of state polygraph legislation, did not ban the device, but instead imposed various regulations on both examiners and the machine itself.[76] Ten states prohibited employers from requiring their employees to submit to a polygraph, but allowed employers to suggest or request employees submit to a test.[77] Finally, only twelve states and the District of Columbia banned the polygraph outright, mandating that an employer could neither require nor suggest his employee undergo an examination.[78]

Besides state legislatures, a few state courts also expressed their disapproval of the rampant use of the polygraph in the workplace. One such instance was the Texas Supreme Court's ruling in *Texas State Employees Union v. Texas Department of Mental Health and Mental*

69. Eggen & Vedantam, *supra* note 56 (emphasis added).

70. *See* David E. Neely, *The Employee Polygraph Protection Act: Good News for Employees and Job Applicants*, 77 ILL. B.J. 598, 598 (1989).

71. *Id.*

72. *Id.*

73. S. REP. NO. 100-284, pt. 3, at 46 (1988).

74. *Id.* The remaining 15% of tests administered were classified as "post-employment random." *Id.*

75. Johnson, *supra* note 21, at 161.

76. *Id.*

77. *Id.*

78. S. REP. NO. 100-284, at 43; Johnson, *supra* note 21, at 161.

Retardation.[79] Here, the court found the Texas Department of Mental Health and Mental Retardation's mandatory polygraph policy was overly intrusive and constituted a violation of employees' privacy rights.[80] While the court recognized that it was important for the Department to maintain a safe environment for its patients, the court ultimately held that it was more important to protect employees' right to privacy.[81] Unfortunately, because state courts found support for their rulings in the Constitution, many of these rulings did nothing to help private-sector employees.[82]

2. Congressional Action Moving Toward the Creation of the EPPA

Federal scrutiny of the private-sector's avid use and, in some cases, abuse of the polygraph began in the mid-1960s with the 93rd Congress.[83] From the 93rd to 100th Congress when the EPPA was enacted, fifty bills were introduced seeking to restrict, regulate, or ban the use of the polygraph.[84] However, until the EPPA was passed in 1988, there was no uniform federal legislation that protected private-sector employees from unwarranted polygraph examinations, forcing citizens to rely on the patch-work quilt of state polygraph laws.[85] In 1986 during the 99th Congress, Senators Orrin G. Hatch and Edward M. Kennedy introduced S. 1815.[86] While the 99th Congress concluded before the Senate could take action on the bill,[87] S. 1815 was tackled head on by the 100th Congress.[88] Through its investigations, the Senate found a number of abuses which provided justifications for the enactment of the EPPA.

The Senate found the disparity between state laws to be disconcerting, especially since it was this lack of uniform standards that

79. 746 S.W.2d 203 (Tex. 1987).

80. *Id.* at 205-06.

81. *Id.*

82. Neely, *supra* note 70, at 599.

83. *Id.* at 598.

84. *Id.*

85. S. REP. NO. 100-284, pt. 3, at 44 (1988); Tiner, *supra* note 9, at 108. While uniform federal regulation against polygraph examinations of all private-sector employees did not exist before the enactment of the EPPA, some regulations were in place concerning the few private employees who were involved in matters of national security. S. REP. NO. 100-284, at 44. The regulations that did exist were "extremely stringent," setting specific requirements for the qualifications of examiners and the kinds of questions that could be used. *Id.* Most importantly, these regulations prohibited the employer from compelling an employee to take a test and using the employee's refusal as a firing justification. *Id.*

86. Tiner & O'Grady, *supra* note 10, at 107.

87. *Id.* at 108.

88. *See* S. REP. NO. 100-284.

was leading to abuses, often tacitly encouraging employers to "circumvent state restrictions."[89] For example, the Senate found that in Washington, D.C., an employer is prohibited from asking his employee to submit to a polygraph test.[90] However, if that employee was hired and then transferred to a Virginia office, he could be let go there for refusing to take a polygraph.[91] Furthermore, if the same employee was transferred to a Maryland office, he would not be required to take a test, but he may be subjected to questions that are prohibited in Virginia.[92] The Senate found that the very purpose of these laws, to protect each state's citizens how the state saw fit, was being sabotaged by this pervasive lack of uniformity.[93]

The Senate also found that this lack of uniformity not only provided loop-holes for employers, but also left employees "confused or ignorant as to the rights they may enjoy in any given jurisdiction."[94] Citizens who originally refused to take tests were being pigeonholed into taking tests in other states, usually by being transferred to other offices, because they did not know their rights under state law.[95]

Finally, the Senate found that employers were using the polygraphs illegally.[96] In its investigation, the Senate discovered that on a number of occasions, employers were using polygraphs to interrogate employees about union activities, which in itself is a violation of federal labor law.[97] For these reasons, the Senate felt compelled to take action to restrict the abusive use of the polygraph.[98]

3. Opposition to the Law

Like many laws, the EPPA faced some opposition prior to its passage. When the Senate Committee on Labor and Human Resources held hearings on the potential law, it found that a few senators, as well as employers who used polygraphs in their workplaces, were opposed to

89. S. REP. NO. 100-284, at 43.

90. *Id.* at 44.

91. *Id.*

92. *Id.* While the aforementioned example may not be feasible in all parts of the United States, the Senate found it disturbing that such radically different outcomes on the same subject of law could be feasible within a ten mile radius. *See id.*

93. *Id.*

94. *Id.* at 43-44.

95. *See id.* at 44.

96. Tiner & O'Grady, *supra* note 10, at 88.

97. *Id.*

98. *See* S. REP. NO. 100-284.

the passage of the law.[99]

The Committee noted that employers put forth two "plausible arguments" about how the polygraph could act as a positive force in the workplace.[100] First, the employers argued that the possibility of being subjected to a polygraph examination acted as a deterrent for an employee considering bad acts such as stealing from his employer. Second, the employers argued that a polygraph provided a tool for innocent employees to "'clear' themselves of wrongful accusations."[101] The Committee understood these concerns, but determined that these reasons were not enough to keep the use of the polygraph unrestrained, especially because both uses would still be available to an employer under certain provisions of the EPPA.[102] Under the ongoing investigations exception, an employer would still be permitted to ask an employee to submit to a polygraph examination when he had a reasonable suspicion that the employee was involved in a specific incident of economic loss that the employer had suffered.[103] The Committee pointed out that with this exception, the deterrent of the polygraph was still present because there was not a total ban on its use in the workplace and that if an employee wished to 'clear' himself with the use of a polygraph examination, he was free to do so.[104]

Three senators on the Committee, Dan Quayle, Strom Thurmond, and Thad Cochran, opposed the legislation, with two voicing their opinions in the minority view section of the Committee's report.[105] While Senator Quayle and Senator Thurmond wrote their own individual opinions of the proposed EPPA, each had similar reasons for their opposition to the legislation. First, the Senators viewed the legislation as a federal intrusion on states' rights.[106] Senator Quayle was careful to note that he opposed the bill not because he had any strong belief in the accuracy of the polygraph, but because he felt the legislation created a

99. *See* S. REP. NO. 100-284, at 46-47, 56-61.

100. *Id.* at 46.

101. *Id.*

102. *Id.* at 46-47.

103. *Id.*; *see infra* pp. 102-162.

104. S. REP. NO. 100-284, at 47. Even though the Committee noted that an employee could 'clear' himself with the use of a polygraph examination, it also warned employees of the possibility, and even the likelihood, that the test could produce a false-positive. The Committee stated that the rate at which polygraphs give false-positives is sufficiently high that it might even be prudent to consider adding a clause to the legislation that prohibits employers from taking an adverse employment action based solely on the polygraph results without some other corroborating evidence of deception. *Id.*

105. *Id.* at 56, 58.

106. *Id.*

federal intrusion into the employer's hiring and firing decisions, an area scarcely regulated by the federal government except in matters of discrimination.[107] Senator Thurmond expanded upon this, emphasizing the importance of federalism and adding that he felt confident that this was an area the states were best equipped to handle.[108] He believed the states were capable of crafting legislation based on their individual constituents' needs and that the passage of the EPPA "completely undermines the solutions fashioned . . . by the people of these and other states."[109]

Second, the Senators were concerned that this federal legislation impinged on other ways to address the polygraph in the workplace, namely collective bargaining.[110] Both Senators felt that collective bargaining could and already did address the use of the polygraph and that the federal government had no place intruding on these collective bargaining agreements.[111] Finally, both Senators expressed concern that the polygraph would be off-limits to the private sector, but could still be employed by certain government agencies like the Federal Bureau of Investigation and the Central Intelligence Agency without restraint.[112] Senator Quayle was opposed to this "double standard," stating "[f]or them, the polygraph is reliable, but the very same device, in the hands of the same polygrapher, is unreliable for other employers with less important needs for screening . . . . Why is the polygraph reliable for them, but not for Department of Transportation contractors supplying airport anti-terrorist and security services?"[113]

III. DISCUSSION OF THE EMPLOYEE POLYGRAPH PROTECTION ACT

The EPPA was enacted in 1988[114] to rein in employers' use of polygraphs.[115] The Act begins with a definitions section,[116] lays down a general ban,[117] and proceeds to create multiple exemptions to the rule

107. *Id.* at 56.
108. *Id.* at 59.
109. *Id.* at 60.
110. *Id.* at 56, 60.
111. *See id.* at 56-57, 60.
112. *Id.* at 57, 61.
113. *Id.* at 57.
114. 29 U.S.C. § 2001 (2006).
115. *See* 29 U.S.C. § 2002 (2006).
116. 29 U.S.C. § 2001.
117. 29 U.S.C. § 2002.

against employers' use of lie detectors.[118] Like much modern legislation, the Act sets up procedures for enforcement and regulation.[119] The statute creates specific rights for private citizens to bring civil litigation and for the Secretary of Labor to assess fines for violations of the Act.[120] The list of exemptions under the Act is long, but consists primarily of exemptions for the government and certain government contractors,[121] certain high profile industries,[122] and a limited exemption for private employers known as the ongoing investigations exemption.[123] However, to protect privacy rights, the statute strictly regulates usage of the results of the lie detector examination even where an employer qualifies for an exemption under the Act.[124]

A. General Congressional Ban on Polygraphs and Lie Detectors

Close scrutiny of the definitions the legislation utilizes is necessary to understanding the ban created by the Act. The EPPA defines an employer as any person who is acting in the employer's interest toward an employee or even a prospective employee.[125] Employee, an undefined term, was suggested by some courts to apply broadly because Congress used the qualifier "any" in the statute.[126] The two key definitions of the

118. 29 U.S.C. § 2006 (2006).

119. 29 U.S.C. § 2004 (2006). Specifically, the Act requires the Secretary of Labor to create the necessary rules and regulations to enforce the statute, to cooperate with state and local governments and agencies, employers, labor and employment organizations, and to investigate, inspect, and require record keeping as needed to enforce the Act. 29 U.S.C. § 2004(a).

120. 29 U.S.C. § 2005(a)-(d) (2006). The Secretary of Labor has the authority to assess and collect fines and has discretion over the amount of the fine based on past compliance and the severity of the violation (up to a maximum of $10,000). 29 U.S.C. § 2005(a). The Secretary also has the authority to seek injunctions against violators. 29 U.S.C. § 2005(b). The section also authorizes federal courts to issue injunctions and to grant legal and equitable relief under the Act. Violating employers can be liable to both employees and prospective employees for legal and equitable relief, including reinstatement or lost wages and benefits. 29 U.S.C. § 2005(c). It is important to note that an employer could conceivably be liable financially to both the government and private litigants. *See* 29 U.S.C. § 2005(a), (c).

121. 29 U.S.C. § 2006(a)-(c) (2006).

122. 29 U.S.C. § 2006(e)-(f) (2006).

123. 29 U.S.C. § 2006(d).

124. 29 U.S.C. § 2008 (2006).

125. 29 U.S.C. § 2001(2) (2006). While the definition appears unambiguous, some appellate courts have applied an "economic reality test" developed for the Fair Labor Standards Act and the Family and Medical Leave Act. *See* Watson v. Drummond Co., 436 F.3d 1310, 1316 (11th Cir. 2006). This test focuses on the amount of control the individual or organization had over the plaintiff and whose interests were advanced if a representative such as a union was involved. *Id.* (theoretically, a union could be an employer if enough power is wielded over the company and the union acted in the business' interest rather than the employees' interest).

126. Harmon v. CB Squared Servs. Inc., 624 F. Supp. 2d 459, 470-71 (E.D.Va. 2009) (citing

Act are for lie detectors and polygraphs. Both are defined rather broadly. The statute defines lie detectors by listing several extant devices of the era intended to be used to determine whether a person's statements are honest.[127] The definition contemplates mechanical and electrical devices used for the purpose of determining honesty.[128] To the extent that the scope of devices is limited by the examples stated in the first half of the definition, the statute would not cover new devices that rely primarily on medical technologies, such as the fMRI. Polygraphs are defined simply by the method of their operation – measuring "changes in cardiovascular, respiratory, and electrodermal patterns" – and by their purpose, which is to create a "diagnostic opinion" of the person's statements.[129] Within these parameters, the Act sets up a general ban on polygraph use.

1. The Ban on Lie Detectors as Set Down by Congress

The Act comprehensively bans an employer from any attempt to solicit or require an employee to take a polygraph examination, unless the employer specifically meets one of the exemptions enumerated in § 2006.[130] Any employer engaged in commerce[131] cannot, either directly or indirectly, "require, request, suggest, or cause any employee or prospective employee to take . . . a lie detector test."[132] The employer is further prohibited from using, accepting, or inquiring about results of

29 U.S.C. § 2002(*l*)-(4) (2006)). *See generally* 29 U.S.C. § 2001 (the term employee is not defined in the definitions section of the statute).

127. 29 U.S.C. § 2001(3). The text of the statute states "[t]he term 'lie detector' includes a polygraph, deceptograph, voice stress analyzer, psychological stress evaluator, or any other similar device (whether mechanical or electrical) that is used, or the results of which are used, for the purpose of rendering a diagnostic opinion regarding the honesty or dishonesty of an individual." *Id.*

128. *Id.* Regulations exclude from the definition of lie detectors medical tests that determine the presence of alcohol or controlled substances in bodily fluids. 29 C.F.R. § 801.2(d)(2) (2011).

129. 29 U.S.C. § 2001(4). The text provides:

The term "polygraph" means an instrument that--

(A) records continuously, visually, permanently, and simultaneously changes in cardiovascular, respiratory, and electrodermal patterns as minimum instrumentation standards; and

(B) is used, or the results of which are used, for the purpose of rendering a diagnostic opinion regarding the honesty or dishonesty of an individual.

Id.

130. 29 U.S.C. § 2002 (2006); 29 U.S.C. § 2006 (2006).

131. In defining commerce, the EPPA refers the reader to 29 U.S.C. § 203(b). 29 U.S.C. § 2001(1) (2006). There, commerce is defined as "trade, commerce, transportation, transmission, or communication among the several States or between any State and any place outside thereof." 29 U.S.C. § 203(b) (2006).

132. 29 U.S.C. § 2002(1).

any lie detector test of an employee or prospective employee.[133] Lastly, an employer cannot threaten the employee with or take any negative action against the employee or prospective employee for refusing to take a lie detector test or based on the results of such a test.[134] The Act further bans employer action against employees who have complained, testified (or plan to do so), or exercised the protections of the Act on behalf of others.[135] The result of the ban is that an employer cannot force or even encourage an employee to take a polygraph examination without violating the Act. The use of results is an independent violation under the Act.[136]

Congress wrote the ban to act only as a floor, not a ceiling. The Act specifically states it will not preempt any state or local law or any collective bargaining agreement that is more restrictive in its use of lie detectors.[137] Therefore, employees or legislators could effectively ban any and all use of lie detectors by employers without violating the statute and without contravening legislative intent.

2. Judicial Interpretation of the Ban on Lie Detectors

As with all legislation, courts developed a degree of nuance when interpreting the statute. Certain portions of the statute have been interpreted very strictly. For instance, even a mere request to complete a lie detection test is a violation, regardless of whether the employee consents or refuses.[138] Additionally, courts have clearly enforced as a violation the provision against indirect suggestions to take a test, even where the employee voluntarily consented.[139] In one case, the Fourth Circuit held that merely alluding to the results was sufficient to violate § 2002(2).[140] Each violation of a sub-section under § 2002 by an employer

133. 29 U.S.C. § 2002(2).

134. 29 U.S.C. § 2002(3). The adverse employment actions barred by the Act are: being discharged, disciplined, discriminated against, denied employment, or denied promotion. *Id.*

135. 29 U.S.C. § 2002(4).

136. *See* Harmon v. CB Squared Servs. Inc., 624 F. Supp. 2d 459, 473 (E.D.Va. 2009); Worden v. Suntrust Banks, Inc., 549 F.3d 334, 346-47 (4th Cir. 2008).

137. 29 U.S.C. § 2009 (2006).

138. Watson v. Drummond Co., 436 F.3d 1310, 1313 n.4 (11th Cir. 2006) (citing Polkey v. Transtecs Corp., 404 F.3d 1264, 1268 (11th Cir. 2005)) (noting that the plain language of § 2002(1) only requires an employer to request or suggest an employee take a polygraph test to be held liable). *See also Harmon*, 624 F. Supp. 2d at 473.

139. *Watson*, 436 F.3d at 1313 n.4.

140. *Worden*, 549 F.3d at 347 n.11 (defining "refer to" as alluding or directing attention to) (citation omitted).

is an independent violation not dependent on any other provision.[141] This means a violation premised upon a request to take a lie detection test is not dependent on whether the employer actually uses the results in any employment decisions or vice versa. Certain interpretations are grounded in common sense. For example, only requests from the employer can establish a violation.[142] Moreover, only a person with the authority to terminate the employee can trigger a violation.[143]

Other portions of the statute have been interpreted in a less straightforward manner by the courts. For instance, the Fourth Circuit has applied the mixed-motive test, developed in *Price Waterhouse v. Hopkins*,[144] to determine if liability should apply under § 2002(3) for an adverse employment action if the employer was going to terminate the employee before the violation.[145] For a violation to occur, the adverse employment action does not have to be the "sole" reason for the decision.[146] However, the *Price Waterhouse* test provides that where a mixed-motive exists, meaning the employer made a decision for both legitimate *and* unlawful reasons, the employer can escape liability by proving the decision would have been made solely upon legitimate reasons.[147] Therefore, in *Worden v. Suntrust Banks*, the employer was not found liable under § 2002(3), despite having knowledge of the independent polygraph results, because it had independent justification to terminate the employee and had acted similarly in the past where no polygraph results were at issue.[148] This statutory analysis differs from the plain text suggesting liability regardless of other reasons for the employment decision.

B. Various Exemptions to the EPPA's General Ban

The EPPA lists six exemptions to the general ban set down by § 2002.[149] None are as sweeping as the first exemption for governmental entities. Section 2006 states that the EPPA is not applicable to the

141. *Id.* at 346.

142. *Watson*, 436 F.3d at 1314 (concluding that offers by the employer to administer a polygraph test after a request to do so, either by the employee or his agent (i.e. union officials), do not violate § 2002(1)).

143. *See Worden*, 549 F.3d at 343.

144. 490 U.S. 228 (1989).

145. *Id.* at 341-43.

146. *Id.* at 341.

147. *Id.* at 341-42.

148. *Id.* at 342.

149. 29 U.S.C. § 2006(a)-(f) (2006).

federal, state, or local government when acting as an employer.[150] Subsequent regulations interpreted this in a sweeping manner to include all three branches of the government, civilian and military, and all agencies and government corporations.[151] The same regulation states the exemption does not extend to any government contractors,[152] though other exemptions do alter that pronouncement.[153] The legislation does not change the status quo regarding government use of lie detectors on its employees under this exemption.

The Act also creates a national defense and security exemption for the federal government, "in the performance of any counterintelligence function," to use a lie detector on any experts, consultants, or employees of contractors for the Department of Defense and the Department of Energy when working with atomic energy activities.[154] The same section also extends the exemption to any expert, consultant, or employee of these contractors working for several intelligence-oriented agencies, such as the Central Intelligence Agency (CIA).[155] The exemption extends to any applicants of these agencies as well as any person with access to certain sensitive information and any experts, consultants, or employees of these consultants with access to top-secret information.[156] The Act grants the Federal Bureau of Investigation (FBI) a similar exemption to use lie detectors on employees of its contractors when the FBI is acting "in the performance of any counterintelligence function."[157]

Security services are exempt from the EPPA ban for certain narrowly defined prospective employees.[158] For the exemption to apply, the business must primarily provide "armored car personnel, personnel engaged in the design, installation, and maintenance of security alarm systems, or other uniformed or plainclothes security personnel . . . ."[159] Those personnel must additionally provide protection to "facilities, materials, or operations having a significant impact on the health or

150. 29 U.S.C. § 2006(a); 29 C.F.R. § 801.10 (2010). This sub-section also exempts political subdivisions of state and local governments. *Id.*

151. 29 C.F.R. § 801.10.

152. *Id.*

153. 29 U.S.C. § 2006(b)(1)(A)-(B); 29 U.S.C. § 2006(c).

154. 29 U.S.C. § 2006(b)(1)(A)-(B).

155. 29 U.S.C. § 2006(b)(2)(A)(i)-(iii). The complete list of agencies is "the National Security Agency, the Defense Intelligence Agency, the National Geospatial-Intelligence Agency, [and] the Central Intelligence Agency." 29 U.S.C. § 2006(b)(2)(A)(i).

156. 29 U.S.C. § 2006(b)(2)(A)(iv)-(v)-(B).

157. 29 U.S.C. § 2006(c).

158. 29 U.S.C. § 2006(e)(1).

159. *Id.*

safety of any State or political subdivision . . . or the national security of the United States" as defined by the Secretary of Labor in rules and regulations.[160] Protection of currency, proprietary information, and other financial needs qualify under the Act.[161] Even if the company has some prospective employees who do qualify, the exemption will not apply to other prospective employees of the same company who do not fit this narrow definition.[162] The security services exemption is limited, however, by the procedural rules of § 2007(2) which state with particularity how an examination should be given.[163] The exemption can also be further restricted under § 2009 if more restrictive state or local laws, or collective bargaining agreements, exist.[164]

The EPPA sets up an exemption for companies "authorized to manufacture, distribute, or dispense a controlled substance."[165] This exemption, aptly titled the "Exemption for drug security, drug theft, or drug diversion investigations,"[166] is applicable in two situations. First, the manufacturer may require examination of prospective employees if they will have "direct access" to controlled substances.[167] Second, the exemption may apply to current employees, and operates similarly to the ongoing investigation exemption. Current employees may be examined during an ongoing investigation for criminal or other misconduct if the conduct is related to a potential loss of drugs, and the employee actually had access to the property under investigation.[168] The controlled substances manufacturer exemption is limited identically to the security services exemption, meaning it is subject to the procedural rules of § 2007(2)[169] and additional restrictions under § 2009 for local legislation and collective bargaining agreements.[170]

160. 29 U.S.C. § 2006(e)(1)(A). The "facilities, materials and operations" contemplated by the Act include facilities working with electric and nuclear power, public water utilities, handling of radioactive or toxic waste materials, and public transportation. 29 U.S.C. § 2006(e)(1)(A)(i)-(iv).

161. 29 U.S.C. § 2006(e)(1)(B).

162. 29 U.S.C. § 2006(e)(2).

163. 29 U.S.C. § 2006(e)(1); 29 U.S.C. § 2007 (2006).

164. 29 U.S.C. § 2006(e)(1); 29 U.S.C. § 2009 (2006).

165. 29 U.S.C. § 2006(f)(1).

166. 29 U.S.C. § 2006(f).

167. 29 U.S.C. § 2006(f)(2)(A) (applies if prospective employees will have "direct access to the manufacture, storage, distribution and sale of any such controlled substance").

168. 29 U.S.C. § 2006(f)(2)(B)(i)-(ii).

169. 29 U.S.C. § 2006(f)(1); 29 U.S.C. § 2007.

170. 29 U.S.C. § 2006(f)(1); 29 U.S.C. § 2009.

C. Ongoing Investigation Exemptions

1. Ongoing Investigation Exemption for Private Employers

The ongoing investigation exemption, the focus of our proposed changes below, is the only EPPA exemption available to private sector employers.[171] Private employers can qualify for this exemption only in certain narrowly drawn situations and subject to very specific regulations.[172] Three main conditions must be met, plus the employer must provide written notification prior to actual administration of the testing.[173] The first requirement is that the employer's investigation involves an economic loss or injury to the business itself.[174] According to the statute, examples include "theft, embezzlement, misappropriation, or . . . industrial espionage or sabotage."[175] Additionally, the incident must be related to a specific, known incident of loss and may not be an attempt to uncover a suspected economic loss through random testing.[176] Subsequent regulation has interpreted economic loss to extend beyond direct losses like theft. Indirect losses, where an employee commits a crime using his or her access to the business that induces a loss to the employer, also satisfy this requirement.[177] Examples are money laundering or use of employer vehicles to smuggle drugs.[178]

The statute's second requirement lays down a pragmatic rule that the employee actually had an opportunity to cause the loss or injury.[179] The EPPA subsection states the "employee had access to the property[180] that is the subject of the investigation."[181] The term access applies not just to a person who has access to the property in the literal sense, but also anyone who has an ability to "aid or abet" the economic loss being investigated.[182] The third requirement under the statute is reasonable

171. 29 U.S.C. § 2006(d).

172. *See generally* 29 U.S.C. § 2006(d); 29 U.S.C. § 2007.

173. 29 U.S.C. § 2006(d)(1)-(4).

174. 29 U.S.C. § 2006(d)(1); 29 C.F.R. §801.12(c)(3) (2010).

175. 29 U.S.C. § 2006(d)(1); 29 C.F.R. § 801.12(c)(1)(ii) (noting that the list is not exhaustive; another pertinent example is misappropriation of trade secrets).

176. 29 C.F.R. § 801.12(b) (stating that an employer cannot engage in a "fishing expedition").

177. 29 C.F.R. § 801.12(c)(1)(iii).

178. *Id.* (noting that the commission of a crime on premises alone without an economic loss to the business does not satisfy this requirement).

179. *See* 29 U.S.C. § 2006(d)(2).

180. Property is defined as tangible property but also as less tangible items of value, such as security codes, electronic data, and trade secrets. 29 C.F.R. § 801.12(e)(2).

181. 29 U.S.C. § 2006(d)(2).

182. 29 C.F.R. § 801.12(e)(1). The regulation claims that a bookkeeper at a jewelry store who

suspicion.[183] This requires the employer to have an "observable, articulable basis in fact" to believe the employee being investigated was involved in the economic loss at issue.[184] Access, by itself, is insufficient to prove reasonable suspicion.[185] Additional information, considered under a totality of the circumstances approach, such as reports from co-workers, inconsistent statements, or unusual behavior, is required to establish reasonable suspicion.[186] Determining whether reasonable suspicion exists is a difficult and frequently litigated issue.[187]

The final requirement is a precisely described, written notice to the employee, completed prior to the examination.[188] The statement must describe the specific incident being investigated and the employer's justification for testing that employee.[189] The notice has minimum requirements that must mirror the first three requirements to qualify for the exemption. It must state both the specific economic loss at issue in the investigation[190] and that the "employee had access to the property."[191] The employer's statement must disclose in detail the basis for reasonable suspicion against the employee who will be examined.[192] The statute lastly requires the statement to be signed by an authorized representative of the employer[193] and kept on file for three years.[194]

Regulations have imposed some additional hoops to jump through beyond those the statute requires. The employee must receive the written notice required by the statute at least forty-eight hours prior the examination.[195] Additionally, the date and time the statement is received, including the employee's signature, is required to verify the forty-eight-hour mandate.[196] Failure to satisfy any one of the numerous requirements

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manages inventory records has "access" sufficient for the statute. Because the bookkeeper is capable of aiding and abetting a theft by doctoring records, the bookkeeper has access. *Id.*

183. 29 U.S.C. § 2006(d)(3).

184. 29 C.F.R. § 801.12(f)(1).

185. *Id.*

186. 29 C.F.R. § 801.12(f)(1)-(2). *See also* Mark G. Kisicki, *Don't Do It! The Workplace and Polygraphs Just Do Not Mix: The Employee Polygraph Protection Act*, SR037 A.L.I.-A.B.A. 1159, 1161 (2010).

187. Long v. Mango's Tropical Cafe, 958 F. Supp. 612, 616 n.8 (S.D. Fla. 1997).

188. 29 U.S.C. § 2006(d)(4).

189. 29 U.S.C. § 2006(d)(4)(A).

190. 29 U.S.C. § 2006(d)(4)(D)(i).

191. 29 U.S.C. § 2006(d)(4)(D)(ii).

192. 29 U.S.C. § 2006(d)(4)(D)(iii). *See also* 29 C.F.R. § 801.12(g)(3) (2010) (noting that the particularity requirement is not satisfied by general assertions).

193. 29 U.S.C. § 2006(d)(4)(B).

194. 29 U.S.C. § 2006(d)(4)(C).

195. 29 C.F.R. § 801.12(g)(2).

196. *Id.*

under this exemption – e.g. time frame for notice, providing written notice, signature, or particularity requirements – invalidates use of the ongoing investigation under the EPPA.[197] The employer would, through error, open the door to all the penalties allowed by the statute.[198] However, written notice detailing the employer's specific basis for suspicion against the employee is not required by the statute unless the test will actually be administered.[199] The three other requirements under § 2006(d), access, reasonable suspicion, and that the investigation must truly be ongoing, must be satisfied to validly request a lie detection examination.[200] The result is that the employer's request is protected without the written notice but the examination is not valid unless the written requirements are satisfied. Like the prior two exemptions, the employee is further protected during the examination by limiting the ongoing investigation exemption with the strict procedural rules of § 2007(b) that depict with particularity how to conduct the examination.[201] The ongoing investigation exemption requirements, in addition to the section 2007 procedural requirements, become so unwieldy for employers to comply with that the American Law Institute ("ALI") has published an article that "strongly discouraged" using lie detector examinations in any circumstance, even if the employer's situation fits within an exemption.[202] Because of the complexities, the ALI report clearly states that an employer should never go forward under the EPPA without attorney guidance.[203]

2. Restrictive Examination Procedures for the Ongoing Investigation Exemption and Others

Section 2007 applies essentially only where private employers may qualify to utilize lie detectors on an employee and never to the government-agency exemptions.[204] For instance, this section applies to the ongoing investigation exemption which is available to any private employer fitting its qualifications, as well as the exemption for security

197. *See id.* § 801.12(h); *see also* Harmon v. CB Squared Servs., 624 F. Supp. 2d 459, 472 (E.D. Va. 2009).

198. 29 C.F.R. § 801.12(h).

199. Watson v. Drummond Co., 436 F.3d 1310, 1315 (11th Cir. 2006) (holding that under § 2006(d)(4), notice is only required once the employee has accepted the request to be examined).

200. *Id.* at 1314.

201. *See* 29 U.S.C. § 2006(d) (2006); 29 C.F.R. § 801.12(h) (2010).

202. *See* Kisicki, *supra* note 186, at 1161.

203. *Id.*

204. *See* 29 U.S.C. § 2006(a).

services and drug manufacturers.[205] Section 2007 sets up a series of detailed procedures during the actual administration of the test if an employee agrees, most of which are geared toward the employee's rights.[206] One such protection states that the ongoing investigation exemption cannot be relied upon if the employer makes an adverse employment decision based on lie detector test results or a refusal to take such test without "additional supporting evidence."[207]

The statute splits the lie detector examination into four categories: procedures to follow in all phases, prior to, during, and after the examination.[208] The procedures are highly protective, often making the hassle appear potentially fruitless to an employer. For instance, the employee can terminate the examination at any point despite initial consent and must be allowed to review all questions prior to the examination.[209] Others procedures try to channel the examination toward only relevant inquiries by banning questions that degrade, unnecessarily intrude, or probe into personal topics, such as religious, political, or sexual affiliations.[210] The pre-test phase, however, requires written notice stating the details of the test itself, such as the time and location, and the right to legal counsel before each test phase.[211] The employer's written notice must further supply specific information about the equipment to be used, the location, and certain rights of the examinee.[212] This written notice, containing certain rights for the employee, potential uses of the examination, and legal rights and remedies of both the

205. *See id.* §§ 2006(d)-(f), 2007(b).

206. *See id.* § 2007.

207. *Id.* § 2007(a)(1) (defining an adverse employment decision as being "discharged, disciplined, denied employment or promotion, or otherwise discriminated against"); 29 C.F.R. § 801.20(a) (2010). Use of an exemption is slightly more forgiving under the security services and drug manufacturer exemptions than the ongoing investigation exemption. *Compare* 29 U.S.C. § 2007(a)(2) (2006) (prohibiting an employer from taking an adverse employment action against an employee or prospective employee if the results of a polygraph or refusal to take a polygraph are the "sole basis" for the action under the security services and drug manufacturer exemptions) *with* § 2007(a)(1) (requiring an employer to provide "additional supporting evidence" for an adverse employment action under the ongoing investigations exemption). Additional supporting evidence under the statute includes access, evidence supporting the employer's claim for reasonable suspicion, and "admissions or statements made by an employee," even during the examination. 29 C.F.R. § 801.20(b)(1)-(2).

208. 29 U.S.C. § 2007(b).

209. *Id.* § 2007(b)(1)(A), (b)(2)(E). Beyond those enumerated in section 2007(b)(1), the statue elicits only one requirement for the examination itself: the employer must restrict relevant questions to those disclosed prior to the examination under section 2007(b)(2)(E). *See id.* § 2007(b)(3).

210. *Id.* § 2007(b)(1)(B)-(C).

211. *Id.* § 2007(b)(2)(A).

212. *Id.* § 2007(b)(2)(B)-(C).

employer and employee under the EPPA, must be read to and signed by the employee.[213]

The post-test phase of the examination requires several steps before an employer can take an adverse employment action.[214] One such requirement obligates the employer to supply the employee with the test results and a list of the questions used during the examination with their respective lie detection responses.[215] An employer-employee meeting is also required to discuss the results with the employee.[216] Importantly, in conformity with the science regarding accuracy of polygraph examinations,[217] the test may not be any shorter than ninety minutes.[218] The statute also sets up several requirements of a valid test examiner and safeguards for the manner in which the examiner must draw his or her conclusions.[219] It is clear that compliance with the numerous provisions of § 2007 and identification of the appropriate exemption is exceptionally difficult for an employer.[220] When considering the liabilities an employer faces both to employees and to the government, employers are likely to find it more prudent to avoid the use of lie detector examinations altogether.

3. Use of Polygraph Results When Employers Qualify for an Exemption

The Act strictly limits the potential dissemination of the results of a lie detector test by any person other than the individual tested.[221] Disclosure is limited to three basic entities.[222] The examiner may disclose the results to the examinee or his designated representative, the employer and, if ordered to do so by a court, to any court, governmental agency, arbitrator, or mediator.[223] Employers are governed by identical restrictions but may additionally disclose the lie detector results to the proper governmental agency to the extent the results operate as "an

213. *Id.* § 2007(b)(2)(D).

214. *Id.* § 2007(b)(4).

215. *Id.* § 2007(b)(4)(B)(i)-(ii).

216. *Id.* § 2007(b)(4)(A).

217. *See* S. REP. NO. 100-284, pt. 3, at 42-43 (1988) (stating the length of a polygraph examination affects the accuracy of the results).

218. 29 U.S.C. § 2007(b)(5).

219. *Id.* § 2007(c).

220. Yvonne Koontz Sening, Note, *Heads or Tails: The Employee Polygraph Protection Act*, 39 CATH. U. L. REV. 235, 267-68 (1989) (concluding that despite the exemptions, the EPPA essentially eliminates employers' right to utilize polygraph testing).

221. 29 U.S.C. § 2008.

222. *Id.* § 2008(b).

223. *Id.* § 2008(b)(1)-(3).

admission of criminal conduct."[224] However, this sub-section does not apply under the general governmental exemption, the national defense and security exemption, or the FBI contractors' exemption.[225] Therefore, under the exemptions, the Act limits the use of the examination results by restricting who may access the results. Only the examinee, employer, and a discrete number of government employees are permitted recipients of the results.[226]

D. Constitutional Protections for Public Employees

Public employers are generally exempt from the EPPA's ban on polygraphs.[227] Instead, public employers are subject to various constitutional restrictions on their use of polygraphs in the employment context. However, it is misguided to rely on these limitations as sufficient to protect employees to the same degree as private sector employees are protected by the EPPA. As discussed below, the constitutional provisions, based on a variety of fact-specific circumstances, do not protect many employees and prospective employees.

The primary protection afforded to public sector employees is a claim of constitutional personal privacy. The Texas Supreme Court recognized this right when it found that its state constitution mimicked the substance of the Federal Constitution's provisions.[228] The court relied on the "zones of privacy" analysis in familiar cases such as *Roe v. Wade*[229] and *Griswold v. Connecticut*[230] to establish a state right to privacy.[231] In this case, the Texas Department of Mental Health and

224. *Id.* § 2008(c)(1)-(2). The examiner can also disclose certain test data to another examiner for assistance in analyzing the results if the identifying information is removed. 29 C.F.R. § 801.35(c) (2010). For decades prior to this legislation, courts have found polygraph tests, specifically, to be inadmissible in courts as evidence. *See* Frye v. United States, 293 F. 1013, 1014 (D.C. Cir. 1923). Therefore, other than as a potential investigatory aid, the polygraph's role in a criminal proceeding is unclear.

225. 29 U.S.C. § 2008(c).

226. *Id.* § 2008(b)-(c).

227. *Id.* § 2006(a); 29 C.F.R. § 801.10(a) (2010).

228. Tex. State Emps. Union v. Tex. Dep't of Mental Health & Mental Retardation, 746 S.W.2d 203, 205 (Tex. 1987). The Texas standard is high, stating the "right to privacy should yield only when the government can demonstrate that an intrusion is reasonably warranted for the achievement of a compelling governmental objective that can be achieved by no less intrusive, more reasonable means." *Id.*

229. 410 U.S. at 113, 152 (1972).

230. 381 U.S. at 479, 485 (1965).

231. *Tex. State Emps. Union*, 746 S.W.2d at 205. The "zones of privacy" theory states that certain constitutional provisions that protect citizens also imply a degree of privacy in the sphere

Mental Retardation implemented a mandatory polygraph policy in part to investigate patient abuse and theft, and the policy was intended to ask only questions tailored to the particular job and incident being investigated.[232] The Department, however, utilized various control questions, which inquired deep into the personal lives of the employees, and were irrelevant to the investigation but were used to determine the truthfulness of relevant questions.[233] To determine if the control questions were a violation, the court balanced the state interest against the employee's privacy, including the degree of the intrusion and its reasonableness.[234] While the court acknowledged the state's interest in protecting patients, it found a violation of personal privacy because the state's interests were not comparable to the safety interests that animate exceptions for police and fire departments.[235] The Texas Supreme Court also carved out exceptions to the constitutional right to privacy, exposing public safety employees to polygraph exams where other public employees are exempt.[236]

The constitutional right to privacy doctrine, with its lack of clear procedures, has limitations that make results unpredictable. In *Woodland v. City of Houston*,[237] the City administered mandatory pre-employment polygraph exams for positions in the fire department and airport police division.[238] The plaintiffs alleged they were asked highly intrusive questions related to past drug use, sexual behavior, extramarital affairs, and other personal matters.[239]

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related to the protected interest. See *id.*

232. *Id.* at 204 & n.1.

233. *Id.* at 204.

234. *Id.* at 205. The court noted that interests that are more closely aligned with state interests, such as public safety, are stronger than typical employer-employee interests. *Id.*

235. *Id.* at 205-06 (noting that the state interest in public safety warrants deference to the decisions of police and fire departments due to the unique circumstances of their jobs).

236. *Id.* at 206.

237. 940 F.2d 134 (5th Cir. 1991). The facts of the *Woodland* case are a practical example of the unreliability of polygraphs. One of the plaintiffs, Goss, took five polygraph examinations, resulting in one passage and four failures. *Id.* at 135-36. Of the four failures, Goss failed questions based upon a theft once, sexual behavior once, drug use three times, and the date of his last polygraph once. *Id.* at 136. This clearly illustrates the same examinee can yield differing results within the same categories of questions, demonstrating an anecdotal inference of unreliability.

238. *Id.* at 135.

239. *See id.* at 136. When the polygraph examiner, a police officer, was asked if she had administered tests with these types of intrusive questions, she readily answered yes. *Id.* at 136-37. She admitted she asked one plaintiff about "the number of times that he had engaged in sexual behavior outside his marriage, homosexual behavior, sexual behavior with animals, marijuana use at any time, arrests of family members, and religion, but denied questioning him about the details of his sexual relations with his wife or masturbation." *Id.* at 137. The examiner also admitted to asking about extramarital affairs, stating "[t]hat was a question that we ask all applicants." *Id.* (alteration in

Courts have implied that a line exists where questions become intrusive, but have been less than clear as to where to draw this line.[240] The Eleventh Circuit has stated that using particular, limited, control questions that are general in nature is not intrusive, despite being "potentially embarrassing."[241] Questions may become problematic when the topics include marriage, family, and sexual relations, which the court "considered to be the most personal."[242] Ultimately, the court gave weight to the City's public safety interest in preventing drug problems among firefighters, which outweighed the intrusion of a general control question.[243]

Hester v. City of Milledgeville indicates that rather than an outright ban on polygraph examinations of employees in the pre-employment context, constitutional guarantees allow a certain degree of intrusive questions to be asked of an employee.[244] This is notable because it demarcates a clear difference between public sector and private sector employee protections. Private sector employees benefit from detailed procedures mandated by the EPPA[245] In fact, the EPPA mandates specifically what questions may be asked of the examinee, offering maximum protection to the employee.[246] Public sector employees, however, are protected only by the degree of intrusion into their personal lives.[247]

Litigants have pressed constitutional arguments other than simply the constitutional right to privacy. Employees who were denied employment or terminated have claimed a Fourteenth Amendment violation of due process on both property and liberty grounds with varying degrees of success. Employees pursuing a procedural due process claim face the stiff burden of establishing a property interest in employment. The Third Circuit reaffirmed "[t]he Fourteenth Amendment's procedural protection of property is a safeguard of the security of interests that a person has already acquired in specific

original). The Court did not resolve whether these questions were overly intrusive; rather, the case was remanded for formal findings of fact by the judge. *See id.* at 139.

240. Hester v. City of Milledgeville, 777 F.2d 1492, 1497 (11th Cir. 1985).

241. *Id.* The Court found asking "whether [the firefighters] had ever done anything which, if discovered, would have resulted in their dismissal or would have discredited the department" to be a general question. *Id.*

242. *Id.*

243. *Id.*

244. *See id.*

245. *See supra* Part III.C.2.

246. *See* 29 U.S.C. § 2007(b)(1)(B)-(C) (2006). *See also supra* Part III.C.2.

247. *See supra* Part III.D.

benefits. . . . He must have more than a unilateral expectation of it. He must, instead, have a legitimate claim of entitlement to it."[248] To claim a property interest in employment, an employee must prove that an entitlement to the employment is created under state law, or similar authorities.[249] In *Anderson*, the plaintiffs were on a waiting list, but because they were merely applicants, they had no entitlement to employment and thus could not establish a property right.[250] Further, where employment decisions necessarily require discretionary choices by management, such as promotion or remaining in the same position indefinitely, the employee can prove neither entitlement nor a property interest.[251] However, where an employee may be terminated only for cause, the employee can establish entitlement to continued employment and thus can state a claim for procedural due process.[252]

Most employees are at-will employees, meaning employers can fire "an employee for good reason, bad reason, or no reason at all."[253] If the employment is at-will, the Supreme Court has found no property interest can exist and therefore, that the employee cannot assert a due process violation.[254] In *Bishop*, the Court found that a policeman was at-will, despite his classification as a permanent employee, because he could be terminated if he did not perform the duties of his position adequately.[255] The Court therefore found that no property interest was violated.[256] Even if a property interest exists, the employee still must prove a deprivation of his or her property interest.[257]

A complaining employee's due process claim based on a liberty interest is also unlikely to succeed. The standard sets up a multitude of hurdles before an employee can prove a violation of due process. To

248. Anderson v. City of Philadelphia, 845 F.2d 1216, 1220 (3d Cir. 1988) (alteration in original) (quoting Bd. of Regents v. Roth, 408 U.S. 564, 576-77 (1972)).

249. *See id.*; Bishop v. Wood, 426 U.S. 341, 345 (1976).

250. *Anderson*, 845 F.2d at 1220. *But see* Stana v. Sch. Dist. of Pittsburgh, 775 F.2d 122, 126 (3d Cir. 1985) (holding that an applicant to a public teaching position had an unusual property interest in her rank on an eligibility list because the school district communicated its policy of keeping candidates on the list for a particular time frame).

251. *Anderson*, 845 F.2d at 1221.

252. *See id.* (citing Perri v. Aytch, 724 F.2d 362, 366 (3d Cir. 1983)); *Bishop*, 426 U.S. at 345 n.8.

253. Witkowski v. Thomas J. Lipton, Inc., 643 A.2d 546, 552 (N.J. 1994). *See also* Whirlpool Corp. v. Vanderburgh Cnty.-Evansville Human Relations Comm'n, 875 N.E.2d 751, 757 (Ind. Ct. App. 2007); Cisco v. King, 205 S.W.3d 808, 812 (Ark. Ct. App. 2005).

254. *See Bishop*, 426 U.S. at 345, 347.

255. *See id.* at 344.

256. *Id.* at 347.

257. *Perri*, 724 F.2d at 366. After determining if a property right exists under state law, courts look to federal law to determine what procedure is due based on the competing interests. *Id.*

successfully win a procedural due process claim premised on a liberty interest, the employer must publicly disclose to a third party a "false and defamatory impression about the employee in connection with his termination."[258] Furthermore, the false statements must "seriously damage his standing and associations in his community" or the false statements must foreclose future employment opportunities in the employee's desired field.[259] The touchstone is dissemination. Regardless of the truth or falsity of the reason for termination, if the employer has not disclosed the reasoning to another party, no liberty violation has occurred.[260] In *Bishop*, the Court stated that even if the charges were false, there was no harm to the employee's reputation, as the manager informed the employee of the charges in private.[261]

Damage to the employee's reputation or future employment must not be simply trivial to sustain a liberty due process claim.[262] Courts have recognized disclosed information to be sufficiently stigmatizing if the claim includes charges of dishonesty and immorality,[263] "[w]here a person's good name, reputation, honor, or integrity is at stake because of what the government is doing to him."[264] An employer must also not deprive the employee of future employment, but is not required to keep the employee in an identical position or to promote him.[265] One court found charges of sexual misconduct with a juvenile under the supervision of a probation officer harmful enough to be "highly stigmatizing and damaging to Morgan's good name, reputation, honor and integrity."[266] However, failure to renew an untenured professor's

258. *Id.* at 367 (quoting Codd v. Velger, 429 U.S. 624, 628 (1977)).

259. *See id.* (quoting Bd. of Regents v. Roth, 408 U.S. 564, 573 (1972); Morgan v. Tandy, No. IP 99-535-C H/G, 2000 WL 682659, at *9-10 (S.D. Ind. Feb. 28, 2000). *See also* Robb v. City of Philadelphia, 733 F.2d 286, 294 (3d Cir. 1984) ("Stigma to reputation alone, absent some accompanying deprivation of present or future employment, is not a liberty interest protected by the fourteenth amendment.").

260. *Bishop*, 426 U.S. at 348. Plaintiffs must argue the disclosed statement is false to justify a due process claim. *See Morgan*, 2000 WL 682659, at *10. If no dispute exists as to the truth of the statement, additional process will not help the employee's claim. *See id.*

261. *Bishop*, 426 U.S. at 348.

262. *See Robb*, 733 F.2d at 294 (quoting *Roth*, 408 U.S. at 573) (claim must be serious enough to possibly harm standing in community or stigmatize).

263. *Id.*

264. Perri v. Aytch, 724 F.2d 362, 367 (3d Cir. 1983) (alteration in original) (quoting *Roth*, 408 U.S. at 573). *But see Robb*, 733 F.2d at 294 (noting that reputational harm is insufficient to prove a liberty violation without the deprivation of current or future employment or a serious claim, such as immorality).

265. *See Robb*, 733 F.2d at 294.

266. Morgan v. Tandy, No. IP 99-535-C H/G, 2000 WL 682659, at *10 (S.D. Ind. Feb. 28, 2000). Another court found termination of a probation department clerk-typist based on a drug-

employment does not give rise to a liberty violation, even though it may suggest poor performance to other potential employers.[267] The Supreme Court stated this result is appropriate any time an employee is terminated without making the justification public.[268]

When an employee fails to recover for his or her claim of an equal protection or substantive due process violation, he will likely also fail to recover for the other claim. Courts have held employment-related equal protection clause challenges ought to be analyzed under the rational basis standard.[269] This standard requires the plaintiffs to show the law "so lack[s] rationality that [it] constitute[s] a constitutionally impermissible denial of equal protection."[270] The Supreme Court has observed that a statute or regulation should be upheld against an equal protection challenge "unless the varying treatment of different groups or persons is so unrelated to the achievement of any combination of legitimate purposes that we can only conclude that the legislature's actions were irrational."[271] This standard requires a plaintiff to show essentially that the action is irrational and no justification exists to support the employer's process.[272] The run-of-the-mill case will generally not meet this standard. Substantive due process claims have been resolved without further analysis where an equal protection claim fails based on the similar standards.[273] Additionally, much like due process claims, plaintiffs must also prove that some deprivation occurred to establish a substantive due process claim.[274]

related criminal arrest, where charges were dismissed prior to termination, to be serious enough to reverse summary judgment to determine whether the employer's justification was disseminated publicly. *Perri*, 724 F.2d at 363, 367-68.

267. Bishop v. Wood, 426 U.S. 341, 348 (1976) (citing *Roth*, 408 U.S. at 575).

268. *Id.* at 348.

269. Anderson v. City of Philadelphia, 845 F.2d 1216, 1222 (3d Cir. 1988) (noting that the rational basis standard is proper "where no fundamental right or suspect class is concerned") (citing Mass. Bd. of Ret. v. Murgia, 427 U.S. 307, 313 (1976)).

270. *Id.* at 1223 (citing Rogin v. Bensalem Twp., 616 F.2d 680, 688 (3d. Cir. 1980)).

271. *Id.* (citing Vance v. Bradley, 440 U.S. 93, 97 (1979)).

272. *See Anderson*, 845 F.2d at 1223.

273. *See id.* at 1225 (finding no basis to review a substantive due process claim where the standard requires deference "unless it can have no rational, legitimate foundation") (citation omitted).

274. *See* Robb v. City of Philadelphia, 733 F.2d 286, 294 (3d Cir. 1984).

IV. INTO A BRAVE NEW WORLD OF LIE DETECTION: THE USE OF FMRI

WHAT IS FMRI?

Most people are familiar with a traditional magnetic resonance imaging device ("MRI"), either by undergoing a routine medical scan themselves, hearing about it from relatives, or seeing it on television. A traditional MRI uses noninvasive magnetism to produce images of what is going on inside the body.[275] When a health professional takes an MRI of a person's brain, the machine first uses its magnet to align hydrogen atoms within the brain, and then sends out a pulse of energy to disrupt this alignment.[276] When the atoms in the brain realign to the magnet, they give off small bursts of energy.[277] It is these bursts that are collected and charted by the MRI device to give the examiner a picture of what's lurking beneath the patient's skin.[278]

A functional magnetic resonance imaging device ("fMRI") uses the same technology as a conventional MRI, but monitors fluctuations in blood flow to various parts of the brain.[279] The same magnet used to align atoms in a conventional MRI emits pulses that can pick up small changes in a patient's blood oxygen levels through what is called the blood-oxygen-level dependent ("BOLD") effect.[280] These fluctuations in blood flow to certain areas of the brain are indicators of increased activity within that brain region.[281] Unlike a standard MRI, which produces a static image, fMRI scans the brain for blood flow every two to three seconds, allowing the machine to create a series of images that can show changes in the levels of neural activity.[282] As one writer puts it, this gives the examiner "a sort of cartography of cognition."[283] The

275. Corydon Ireland, *Symposium: 'Will Brain Imaging Be Lie Detector Test of the Future?'*, HARVARD GAZETTE, Feb. 8, 2007, http://news.harvard.edu/gazette/story/2007/02/symposium-will-brain-imaging-be-lie-detector-test-of-the-future/.

276. Kittay, *supra* note 2, at 1357.

277. *Id.*

278. *See id.*

279. *Id.*; Ireland, *supra* note 275.

280. *See* Joseph Simpson, *Functional MRI Lie Detection: Too Good to be True?*, 36 J. AM. ACAD. PSYCHIATRY & L. 491, 492 (2008); Ireland, *supra* note 275. It is believed that active nerve cells in the brain consume more oxygen, so when an fMRI detects blood with higher levels of oxygen in a certain area of the brain, it is inferred that activity is occurring in that brain region. *See id.*

281. Simpson, *supra* note 280, at 492. For example, if a certain area of the brain becomes active, blood flow to that area will increase. *Id.*

282. Ireland, *supra* note 275.

283. *Id.*

fMRI's brain activity maps are used in a number of specific areas of medicine and are being-studied for use in others.[284]

A. fMRI as a Lie Detection Device

As early as 1999, some scientists fathomed that if a lie begins in the brain, then perhaps an fMRI scan, which by its very purpose measures activity within the brain, could detect when a person was lying.[285] Now, more than ten years later, the idea has taken off. A multitude of studies have been conducted using the fMRI technology as a lie detector,[286] and on the heels of these studies, two companies, No Lie MRI[287] and Cephos Corporation,[288] have formed seeking to bring fMRI lie detection technology into the legal mainstream for use in the courtroom, employment screening, and any other area previously dominated by the polygraph.[289]

The use of fMRI technology in lie detection relies on the idea that the brain is hardwired to tell that truth.[290] In order for a person to tell a lie, he must overcome the brain's natural inclination to speak the knowledge it knows and formulate a falsehood.[291] This requires additional activity in more areas of the brain, which can be detected through the BOLD effect by fMRI when newly-oxygenated blood enters a certain region of the brain.[292] Sometimes the areas of brain activity can even double when a person is telling a lie.[293] However, there is somewhat of a disagreement among scientists as to which areas of the brain are actually associated with lying and deception when activated.[294] Studies have found that a variety of areas participate in lying, such as the

284. Simpson, *supra* note 280, at 492. More specifically, the fMRI readings are being used in pre-surgical evaluations for patients with epilepsy and brain tumors. *Id.*

285. Ireland, *supra* note 275.

286. *See* Simpson, *supra* note 280, at 491. These studies put volunteers in a variety of situations, including those that required telling spontaneous lies, rehearsed lies, pretending to have an impaired memory, lying about stealing various items, lying about firing a gun, and various versions of the Guilty Knowledge test. *Id.* at 492.

287. NO LIE MRI, http://noliemri.com/index.htm (last visited Feb. 13, 2011).

288. *The Technology Behind Lie Detection*, CEPHOS CORPORATION, http://www.cephoscorp.com/lie-detection/index.php (last visited Feb. 13, 2011).

289. Simpson, *supra* note 280, at 491. *See* Kittay, *supra* note 2, at 1352.

290. Kittay, *supra* note 2, at 1358.

291. *Id.*

292. *See id.* at 1359.

293. *Id.* In the study mentioned, seven areas of the brain were activated when the subject was telling the truth and fourteen areas were activated while lying. *Id.*

294. *Id.* at 1358.

inferolateral cortex,[295] left middle temporal area,[296] and the medial frontal gyrus.[297] While there is dispute about the exact areas, many researchers agree that there is more activity in the prefrontal lobe and anterior cingulated areas when a person is lying because these areas generally control cognitive reasoning, and are therefore "recruited for the purpose of inhibiting . . . a true answer."[298]

Administration of an fMRI lie detection test is similar to that of a polygraph. Many of the same questioning techniques, such as the control question method or the guilty-knowledge test,[299] used in polygraph examinations are used with fMRI.[300] However, unlike a polygraph, questions are fed to the examinee via a computer screen and he responds by clicking a button indicating either "yes" or "no."[301] One prominent study[302] had thirty subjects participate in a mock crime involving either a ring or a watch.[303] The subjects were paid fifty dollars for simply participating, but were also told that if they could trick the lie detector, they would receive fifty additional dollars.[304] The researchers were able to accurately determine whether the participant took the ring or the watch in twenty-eight out of thirty cases, a 93% accuracy rate.[305] A second group of thirty-one participants underwent the same scenario and there the researchers accurately predicted twenty-eight out of thirty-one cases, a 90% accuracy rate.[306] Another similar study conducted by other researchers using the guilty-knowledge test reported an 86-90%

295. Daniel D. Langleben et al., *Telling Truth From Lie in Individual Subjects With Fast Event-Related fMRI*, 26 HUM. BRAIN MAPPING 262, 271 (2005) (noting that this area is key because lying is a "memory-intense activity" and this brain area is involved in memory and response-selection).

296. Frank Andrew Kozel et al., *A Replication Study of the Neural Correlates of Deception*, 118 BEHAV. NEUROSCIENCE 852, 855 (2004). This study identified five regions of the brain in total involved in lying: right anterior cingulate, right inferior frontal, right orbitofrontal, right middle frontal, and left middle temporal. *Id.*

297. *See* NO LIE MRI, *supra* note 287.

298. Simpson, *supra* note 280, at 492.

299. *See supra* pp. 144-45.

300. *See* Simpson, *supra* note 280, at 493 (discussing a modified version of the guilty knowledge test); Kittay, *supra* note 2, at 1359 (using, but not referring to by name, the control question technique).

301. *See* Simpson, *supra* note 280, at 493; Kittay, *supra* note 2, at 1355.

302. Kittay, *supra* note 2, at 1366. This study was conducted by researchers working in collaboration with Cephos Corporation. *Id.*

303. Simpson, *supra* note 280, at 493.

304. *Id.* In reality, all participants received $100 regardless of whether they could fool the computer, but the researchers wanted to give the participants some incentive to lie. *See id.*

305. *See* Frank Andrew Kozel et al., *Detecting Deception Using Functional Magnetic Resonance Imaging*, 58 BIOLOGICAL PSYCHIATRY 605, 605 (2005).

306. *See id.*

accuracy rate.[307]

B. Advantages of fMRI

Advocates of using fMRI in lie detection, such as No Lie MRI and Cephos Corporation, cite many real advantages to using fMRI over a polygraph. The first is that the nervousness of an examinee will likely not affect the outcome of an exam.[308] A nervous examinee may cause a false positive on a polygraph, but this is less likely during an fMRI scan since brain activity rather than heart rate is being measured.[309] A second benefit is the tangible result of each test. A polygraph spits out a long paper with various rows of scribbles that look like they came off a heart monitor at a hospital, while an fMRI gives full-fledged pictures of the examinee's brain and color codes the areas of the brain that are active, making the result decipherable by almost anyone.[310] Finally, as mentioned previously, an fMRI examination is, in essence, administered by a computer.[311] This effectively eliminates the potential for an examiner or an examinee to influence the results of the fMRI scan by intimidating the other.[312]

C. Controversy in the Courtroom

The fMRI made its courtroom debut in late 2009, but not for the purposes of lie detection.[313] The defendant in that case, Brian Dugan, pleaded guilty to murdering a woman and was facing the death penalty.[314] In his sentencing hearing, his lawyers put Kent Kiehl, a neuroscientist from the University of New Mexico, Albuquerque, on the stand to testify about fMRI scans he administered to Dugan.[315] Kiehl related to the court that Dugan's fMRIs showed he had mental abnormalities associated with psychopathy, a mental illness, and because

307. Simpson, *supra* note 280, at 493.

308. *Id.*

309. *See id.* "The assumption is that even a trained counter-spy must use creativity and calculation to formulate a new lie, and the most nervous Nellie will use memory to recount an event in her past." Kittay, *supra* note 2, at 1355.

310. *See* Kittay, *supra* note 2, at 1355.

311. *Id.*

312. *See id.*

313. *See* Greg Miller, *fMRI Evidence Used in Murder Sentencing*, SCIENCE INSIDER (Nov. 23, 2009, 5:45 PM), http://news.sciencemag.org/scienceinsider/2009/11/fmri-evidence-u.html.

314. *Id.*

315. *Id.*

of this illness, Dugan should be spared from the death penalty.[316]

As a scientific tool of lie detection, the fMRI has not fared well in the courtroom. In March 2009, defense counsel in a child sexual abuse case in southern California sought to have fMRI scans performed by No Lie MRI entered into evidence to show his client's innocence.[317] Only one week later, the defense withdrew its petition to admit the scan, with many speculating that it was withdrawn due to the number of expert witnesses the prosecution had acquired to testify against the scientific soundness of the technology.[318]

The fMRI did not return to the courtroom until over a year later when a plaintiff, Cynette Wilson, tried to use fMRI scans from Cephos Corporation in a retaliation case against her employer.[319] One of Wilson's coworkers, Ronald Armstrong, was willing to testify as to the retaliation and submitted to an fMRI examination to show his truthfulness.[320] The defendant, Corestaff Services, sought to preclude Wilson's expert from testifying and Wilson pushed forward for a *Frye* hearing before the court.[321] The court, however, only touched on the scientific reliability in dicta, finding a different reason to exclude the

316. *Id.* Apparently the jury did not subscribe to what the defense was selling because they sentenced Dugan to death after more than five hours of deliberation that spanned a two-day period. *Id.*

317. Greg Miller, *Truthiness? No Lie MRI Hits the Legal System,* SCIENCE INSIDER (Mar. 17 2009, 3:24 PM), http://news.sciencemag.org/scienceinsider/2009/03/truthiness-no-l.html [hereinafter Miller, *Truthiness*]. The scans found that the defendant was not lying when he denied molesting the child. *Id.*

318. Letter from Gary C. Seisner, Attorney, to Henry Greely, Director, Center for Law and the Biosciences, Stanford Law School (Mar. 25, 2009), *available at* http://blogs.law.stanford.edu/lawandbiosciences/2009/03/25/request-to-admit-no-lie-mri-report-in-california-case-is-withdrawn/. *See* Miller, *Truthiness*, *supra* note 317.

319. *See* Wilson v. Corestaff Servs. L.P., 900 N.Y.S.2d 639, 640 (Sup. Ct. 2010); Greg Miller, *fMRI Lie Detection Hearing Ends, Decision Still to Come*, SCIENCE INSIDER (May 14, 2010, 2:49 PM), http://news.sciencemag.org/scienceinsider/2010/05/fmri-lie-detection-hearing-ends-.html [hereinafter Miller, *fMRI Lie Detection*]. In this case, the plaintiff worked for a temporary staffing agency, Corestaff Services. *Wilson*, 900 N.Y.S.2d at 640. She was placed at an investment banking firm where she received an offensive, nude photograph from a coworker via fax. *Id.* She then filed a sexual harassment complaint with both the bank and Corestaff. *Id.* After filing this complaint, Wilson no longer received good assignments. Kelly Lowenberg, *Breaking News: fMRI Lie Detection Evidence Excluded in NY Court*, STANFORD L. SCH. L. & BIOSCIENCES BLOG (May 5, 2010), http://blogs.law.stanford.edu/lawandbiosciences/2010/05/05/breaking-news-fmri-lie-detection-evidence-excluded-in-ny-court-2/.

320. *Wilson*, 900 N.Y.S.2d at 640. Armstrong was willing to testify that he was told not to place Wilson in work assignments because she filed a complaint. *Id.* To prove his truthfulness, he submitted to an fMRI, which showed he was not lying. *Id.* Wilson then notified opposing counsel of her intent to call an expert witness to testify to the truthfulness of Armstrong's statements. *Id.*

321. *Id.*

expert witness: it impinged on the province of the jury.[322] The court stated that the credibility of a witness is a collateral matter that has "from the dawn of the common law" been a matter solely for the jury[323] and that expert testimony is only appropriate when it deals with technical or professional knowledge "beyond the ken" of a typical juror.[324] While the court said a *Frye* hearing was unnecessary, it still noted that even with a cursory view of the evidence presented, the plaintiff would have been unable to show that fMRI is accepted as reliable in the scientific community for the detection of deception.[325]

A week after the *Wilson* decision was handed down in New York, Tennessee Magistrate Judge Tu Pham heard arguments and expert testimony in a *Daubert* hearing about whether an fMRI scan could be admitted in a criminal case involving a psychologist who was accused of defrauding the Medicare system.[326] On June 1, 2010 Judge Pham deemed the fMRI scan inadmissible for the purpose of lie detection.[327] The court stated that fMRI was inadmissible under both the *Daubert* standard and rule 403 of the Federal Rules of Evidence.[328] The court cited a number of areas where it felt fMRI was significantly lacking, such as real-world research involving examinees who were facing imprisonment for real crimes, support from the scientific community, and proper scientific methodology.[329] Judge Pham also expressed special concern about the testimony given by the defense's expert, Dr. Steven Laken, founder of Cephos Corporation, as he could not say with certainty whether Semrau was lying on any one specific question, but just that Semrau was being "more overall" truthful.[330] The court was unable to see how that kind of testimony would be able to aid a jury

322. *Id.* at 642.

323. *Id.* at 641 (citing People v. Williams, 159 N.E.2d 549, 554 (N.Y. 1959)).

324. *Id.* at 642.

325. *Id.*

326. *See* Miller, *fMRI Lie Detection*, *supra* note 319. The defendant, Lorne Semrau, the Chief Executive Officer of two nursing homes, was accused of having employees fraudulently complete Medicare and Medicaid forms, earning an extra three million dollars for his facilities. Alexis Madrigal, *Brain Scan Lie-Detection Deemed Far from Ready for Courtroom*, WIRED (June 1, 2010, 3:20 PM), http://www.wired.com/wiredscience/2010/06/fmri-lie-detection-in-court/. Semrau had Cephos conduct fMRIs and was attempting to use those scans in court to show his innocence and that he was acting in good faith when filing the forms. *Id.* Interestingly enough, Semrau originally contracted to take two fMRIs with Cephos and failed one of the two. *Id.* He took a third test with Cephos, which he passed. *Id.*

327. *See* Madrigal, *supra* note 326.

328. *Id.* Rule 403 lets a judge exclude evidence if he feels its "probative value is substantially outweighed" by the prejudice or confusion it may cause. FED. R. EVID. 403.

329. *See* Madrigal, *supra* note 326.

330. *Id.*

deciding whether or not the defendant's testimony was reliable and credible.[331] After Judge Pham's decision, the prospects for the admission of fMRI in court regarding a witness's credibility do not look bright.

V. PROPOSALS TO UPDATE AND IMPROVE THE EPPA

A. Constitutional Protections Are Insufficient to Adequately Protect Employees

Constitutional personal privacy has notable limitations that fall short of the procedural protections afforded by the EPPA. First, the test applied by courts fails to be an effective predictor of which exam questions are acceptable. The test requires balancing the employee's privacy against the government's interest, while weighing more heavily toward government employers whose mission relates to public safety.[332] While the test considers intrusiveness and reasonableness,[333] it does not provide guidance or indicate clear criteria to the employer about whether a question goes too far. Courts allow "potentially embarrassing" questions if they are general in nature.[334] If the government interest is strong, the employee may be required to answer questions about personal topics.[335] The EPPA, however, is far more clear about which questions may be asked during an exam. For instance, employers can never ask questions about religion, political matters, or sexual behavior.[336] This protection is not a matter of balancing, but of right.[337] Public sector employees are undeniably less protected than private sector employees from intrusions and embarrassment because of these EPPA restrictions. The fact-specific nature of the balancing test is incapable of ensuring predictable exam restrictions.

Due process claims do little to advance an employee's privacy from intrusion. Even where an employee establishes a violation of a property or liberty right under the Fourteenth Amendment, he is only entitled to notice and a hearing to explain lack of wrongdoing accused in the charges.[338] Additional process, however, does not deter an employer

331. *Id.*

332. *See supra* Part III.D.

333. *See supra* Part III.D.

334. *See supra* Part III.D. (citing Hester v. City of Milledgeville, 777 F.2d 1492, 1497 (11th Cir. 1985)).

335. *See supra* Part III.D.

336. 29 U.S.C. § 2007(b)(1)(C) (2006). *See supra* Part III.D.

337. *See* 29 U.S.C. § 2007(b)(1)(C).

338. Morgan v. Tandy, No. IP 99-535-C H/G, 2000 WL 682659, at *11, *14 (S.D. Ind. Feb.

from utilizing a lie detector or from firing an employee. An employer must only give notice of the reason for the termination and allow the employee an opportunity to be heard prior to the termination.[339] Neither notice nor an opportunity to be heard restricts an employer's ability to use a lie detector because these safeguards only apply after the employer decides to take adverse action against the employee. If the employer completes this minimal hearing requirement, due process will be satisfied.[340] Such a minor requirement is insufficient to protect employees from unnecessary lie detector tests, and cannot adequately influence an employer's decision to give a lie detector test.

Additionally, the procedures afforded under due process claims are less stringent than those of the EPPA. To satisfy due process, an employee is only entitled to notice and a hearing to defend the allegations.[341] The EPPA provides more comprehensive procedures, including the manner in which the exam may be conducted, who may administer the exams, and even under what circumstances an exam may be requested.[342]

Furthermore, the procedures guaranteed under the ongoing investigation exemption are concrete and restrictive.[343] For instance, the employer cannot fire an employee on the basis of a failed lie detector test alone; rather, it must have something more.[344] Due process does not have a similar restriction.[345] As a result, private sector employees have greater procedural protections than public sector employees. Applying the ongoing investigation exemption to all employers would afford all employees equal procedural protections under the EPPA.

Equal protection claims do not afford employees much assistance due to the high burden a plaintiff must establish to succeed. *Anderson v. City of Philadelphia*[346] is an apt example. In *Anderson*, the court upheld the use of polygraphs on applicants for police and prison correctional officer positions because the plaintiffs were not able to prove that the

28, 2000) (noting a public employee is "entitled to a hearing and an opportunity to clear his name *before* a private accusation becomes public"). *See* Perri v. Aytch, 724 F.2d 362, 366-67 (3d Cir. 1983) (noting some form of hearing and notice of the reason for dismissal are required before depriving an employee of a property interest in employment).

339. *See Morgan*, 2000 WL 682659, at *17.

340. *See id.* at *11, *17; *Perri*, 724 F.2d at 366-67.

341. *Morgan*, 2000 WL 682659, at *11, *17.

342. *See supra* Part III.C.2.

343. *See supra* Part III.C.2.

344. *See supra* Part III.C.2.

345. *See supra* Part III.D.

346. 845 F.2d 1216 (3d Cir. 1988).

polygraph could "not reasonably be believed to produce" better employees than without using a polygraph.[347] The court reasoned the expert witness' testimony, which stated that a lack of scientific evidence existed to prove the validity of polygraph testing, did not support the argument that polygraphs are irrational to use, as the polygraph's results distinguish truth "with an accuracy greater than chance."[348] The court was unconcerned that qualified applicants might be excluded in error because the equal protection clause only requires the new hires be a more qualified group than a group that did not use the polygraph.[349] The court noted polygraphs had a secondary effect of intimidating employees into completing honest applications, eliciting presumably more reliable information about an applicant.[350] Since no equal protection violation occurred, the court allowed law enforcement administration to decide whether polygraphs are appropriate to use.[351] This case illustrates the difficulty of satisfying an equal protection claim against an employer. The employee must effectively prove no rational basis exists for an employer's action. Here, the court did not consider the potential inaccuracies of the polygraph. As a result, protection from lie detectors is unlikely to stem from this ground.

B. Applying the Ongoing Investigation Exemption to All Employers Creates a Uniform Safe Haven for Employees While Affording Employers the Latitude to Act when Necessary

The ongoing investigation exemption under the EPPA offers the best solution to protect all employees from intrusive and unreliable testing regarding employment during most typical situations while still allowing employers to complete an investigation with the aid of a lie detector for legitimate concerns if the employer chooses. Because the EPPA only allows investigations for certain thefts, and the lie detection results cannot be the sole basis for a termination, employers have appropriate, limited access to the devices.[352] Constitutional provisions provide varying results based on fact-dependent situations.[353] The EPPA includes more specific restrictions and provides more uniform

347. *See id.* at 1223.
348. *See id.*
349. *See id.* at 1223-24.
350. *See id.* at 1224.
351. *Id.* at 1225.
352. *See supra* Part III.C.1.
353. *See supra* Part III.D.

procedures for personnel subjected to an exam.[354] In order to equalize the protections afforded to private and public sector employees, the EPPA should be revised to limit both private and government employers to solely the ongoing investigation exemption, with only a few exceptions discussed in the next section.

Imposing the ongoing investigation exemption on all employers universally will have the benefit of uniformity. Under the current law, public sector employees' employment is governed by differing state laws that affect different constitutional protections. For instance, certain Pennsylvania judicial employees and civil service employees have a colorable due process claim under the state regulations while employees in Indiana have no basis to complain under their at-will system.[355] Adopting the EPPA universally applies a uniform standard on all working Americans, leading to predictability and greater employee protections. Employees in neighboring states should not harbor differing risks regarding lie detector examinations.

Most importantly, applying the EPPA uniformly against all employers will create equal privacy protection among all employees, rather than two differently treated classes. The ongoing investigation exemption should be extended to all employers as a matter of fairness to employees. Under the current law, an individual's choice of employer – public or private sector – determines the degree of privacy protection available.[356] The decision to pursue a government job rather than a position with a private employer should not determine an individual's exposure to invasive intrusions during lie detection exams. Consequently, applying the EPPA to all employers will foster equal treatment for all employees, not just some employees.

354. *See supra* Part III.C.2.

355. *Compare* Perri v. Aytch, 724 F.2d 362, 366 (3d Cir. 1983) (holding that a clerk-typist had a property interest in continued employment during her probationary period because her employment during first six months could be terminated only for just cause), *and* Robb v. City of Philadelphia, 733 F.2d 286, 293 (3d Cir. 1984) (finding that a property interest in continued employment exists where Pennsylvania State regulations bar removal or demotion of civil servants without just cause), *with* Morgan v. Tandy, No. IP 99-535-C H/G, 2000 WL 682659, at *8 (S.D. Ind. Feb. 28, 2000) (noting that no property interest in employment exists for at-will employees under Indiana law).

356. *Compare* 29 U.S.C. § 2002(1) (2006) (stating that an employer engaged in commerce cannot solicit or require a prospective employee to take a lie detector test), *with* 29 U.S.C. § 2006(a) (2006) (stating that public employers are generally exempt from the ban on polygraphs under the EPPA).

C. Exemptions for Key Government Agencies

While this note proposes eliminating most public sector exemptions from the EPPA, retaining certain exemptions is justified due to a compelling government interest. Sectors of the government such as the Department of Homeland Security, the Federal Bureau of Investigation ("FBI"), the Central Intelligence Agency ("CIA"), and the Department of Defense are among the agencies that should qualify for exemptions under the EPPA. All of these agencies deal with matters of national security and public safety on a daily basis.[357] Because public safety is a high-priority issue, there is a substantial and compelling government interest for these organizations to have access to lie detection devices for their staff. Although this may impose an intrusion upon employees' privacy, their privacy has to be balanced with protecting the safety of citizens. In light of the duties and responsibilities of these agencies, such an exemption under the EPPA is warranted.

In addition to the government interests, political realities must also be considered. Issues of public safety, national security, and military safety are hotly debated topics in Congress that few representatives on either side of the aisle would be enthusiastic to curtail. In light of this, our proposal recognizes a second justification for retaining exemptions for these agencies – a lack of political will. Political support for these agencies has grown in the era after September 11, 2001 due to a heightened focus on risks to public safety.[358] This additional support further complicates any legislative action that would eliminate access to an investigative tool, regardless of whether the tool is of dubious accuracy. Due to the political climate, sweeping legislation prohibiting the use of lie detection devices would be unrealistic and unachievable at this time.

D. Addition of fMRI to the EPPA

As of 2007, approximately forty thousand polygraph examinations

357. The controlled substances manufacturer exemption cannot be justified by an interest of similar magnitude to public safety. Furthermore, if the drug manufacturer suffers from repetitive thefts, it could use the ongoing investigation exemption to investigate the thefts. Accordingly, our proposal includes abolishing EPPA § 2006(f), which would place drug manufacturers in the same position as all employers.

358. *See* Natsu Taylor Saito, *Will Force Trump Legality After September 11? American Jurisprudence Confronts the Rule of Law*, 17 GEO. IMMIGR. L.J. 1, 2 (2002) ("Among the dozens of bills rapidly passed in the wake of September 11 was the 'USA PATRIOT Act,' which gives intelligence and law enforcement agencies dramatically expanded surveillance powers").

were still being administered annually.[359] Regardless of whether this is legislation banning the use of polygraphs in the workplace, the human desire to find the truth is persistent and continues to find new ways to manifest itself. One of these ways is the use of fMRI, a medical diagnostic tool normally used in pre-surgical analysis, as a lie detection device. In order to keep employees protected, the EPPA, as well as its accompanying regulations, need to be updated both to include fMRI and to clarify that any other device or process that is normally used as a medical tool cannot be manipulated and used as a lie detector. Section 2001(3) of the EPPA currently defines a lie detector as "a polygraph, deceptograph, voice stress analyzer, psychological stress evaluator, or any other similar device (whether mechanical or electrical) that is used, or the results of which are used, for the purpose of rendering a diagnostic opinion regarding the honesty or dishonesty of an individual."[360] This section should be amended to define a lie detector as:

> a polygraph, deceptograph, voice stress analyzer, psychological stress evaluator, *functional magnetic resonance imaging (fMRI) scan,* or any other *machine, process, technology, or* similar device, *including medical technology,* that is used, or the results of which are used, for the purpose of rendering a diagnostic opinion regarding the honesty or dishonesty of an individual.[361]

The corresponding regulation that defines a lie detector currently reads "[t]he term lie detector means a polygraph, deceptograph, voice stress analyzer, psychological stress evaluator, or any other similar device (whether mechanical or electrical) that is used, or the results of which are used, for the purpose of rendering a diagnostic opinion regarding the honesty or dishonesty of an individual."[362] This regulation should be changed to read:

> The term lie detector means a polygraph, deceptograph, voice stress analyzer, psychological stress evaluator, *functional magnetic resonance imaging (fMRI)*, or any other *machine, process, technology, or similar device, including medical technology,* that is used, or the results of which are used, for the purpose of rendering a diagnostic

359. Ireland, *supra* note 275.
360. 29 U.S.C. § 2001(3) (2006).
361. Phrases in italics indicate proposed changes to the legislation.
362. 29 C.F.R. § 801.2(d)(1) (2010).

opinion regarding honesty or dishonesty of an individual.[363]

Finally, one portion of the corresponding regulations notes that a drug or alcohol test does not constitute a form of lie detection.[364] This section currently reads "[t]he term lie detector does not include medical tests used to determine the presence or absence of controlled substances or alcohol in bodily fluids."[365] A line should be added to this regulation to remind employers that this is not a prohibition against all medical tests. The regulation should be amended to read:

> The term lie detector does not include medical tests used to determine the presence or absences of controlled substances or alcohol in bodily fluids. *This should not be construed to include other medical technology, such as functional magnetic resonance imaging (fMRI), which is being used in a manner consistent with the definition of a lie detector stated in § 801.2(d)(1).*[366]

While fMRI may not yet be as infamous as the polygraph, it is crucial that this emerging form of lie detection be added to the EPPA for two reasons: its lack of scientific reliability, and its burgeoning use and availability in the employment sector. There are many problems in fMRI's scientific foundation as a lie detection device.[367] First, the rock-bottom assumption, that either more or different areas of the brain are activated when a person is lying, is itself just a guess.[368] In the same way a polygraph physiologically reads changes in respiration, fMRI physiologically reads changes in blood flow in the brain.[369] A person reviewing an fMRI scan can determine the amount of an examinee's brain activity, but activity is only an indirect inference of neuronal activity, which may not be task-specific.[370] Making the connection between brain activity and a lie is a leap that could easily lead to false-positives.[371] As one author puts it, this connection between brain activity and deception is an "[i]f—and it is a huge *if*. . . ."[372]

Second, the research that has been done on the use of fMRI as a lie

363. Phrases in italics indicate proposed changes to the legislation.

364. 29 C.F.R. § 801.2(d)(2).

365. *Id.*

366. Phrases in italics indicate proposed changes to the legislation.

367. *See* discussion *supra* p. 176.

368. *See* discussion *supra* p. 172.

369. *See* discussion *supra* pp. 171-173.

370. Henry T. Greely & Judy Illes, *Neuroscience-Based Lie Detection: The Urgent Need for Regulation*, 33 AM. J.L. & MED. 377, 382-83 (2007).

371. *See id.* at 383.

372. Schauer, *supra* note 3, at 1197.

detection device is significantly lacking. There are a number of factors that the current research has not taken into consideration, which equates to limitations of the technique in general. Up until this point, testing has been conducted on healthy adults.[373] There has been no testing on juveniles or the elderly.[374] There has been no testing on individuals with mental disorders such as schizophrenia, dementia, or anti-social personality disorder.[375] There has been no testing on individuals who were born with birth defects, suffer from mental retardation, or have sustained serious head injuries.[376] Because all of these conditions have or may have some effect on a person's brain, it is uncertain if they would alter the results of an fMRI scan.[377] For example, individuals with antisocial personality disorder frequently exhibit hyporesponsivity, which may allow them to fool a polygraph.[378] It is uncertain if they would have this same advantage over fMRI, especially if the individual believes his own lies. In the same vein, a person with dementia may be delusional, allowing him to pass an fMRI test because he truly believes he is telling the truth, even though his version of the truth is not what actually occurred.[379]

Third, critics of current fMRI research also note that all test subjects have been instructed to lie, which may show up differently on an fMRI scan than "real-world lying," where an individual may have his freedom, job, or livelihood at risk.[380] Some researchers point out that while we may currently be able to detect liars in an experimental setting, there is no guarantee that this will work in the real world.[381] This skepticism is not without basis. Hank Greely, a Stanford Law professor and co-director of the Law and Neuroscience Project, pointed out that in one of the only cases involving the "real world" use of an fMRI as a lie detection device, the accuracy rate was either 33.3% or 66.7%.[382]

373. Simpson, *supra* note 280, at 493.

374. *Id.*

375. *See id.*

376. *See id.*

377. *Id.*

378. *Id.* at 493-94.

379. *See id.*

380. *See* Greely & Illes, *supra* note 370 at 404; Schauer, *supra* note 3, at 1201; Simpson, *supra* note 280, at 494.

381. Schauer, *supra* note 3, at 1201.

382. *See* Madrigal, *supra* note 326. In this case before a Tennessee magistrate judge, Cephos conducted an fMRI scan on a nursing home owner, Semrau, accused of Medicare and Medicaid fraud. *Id.* At first, Semrau took two tests, failing one and passing another. *Id.* Cephos tested Semrau a third time, claiming he had been "tired" during the first two tests. *Id.* Semrau passed the third test. *See id.*

A related criticism is the lack of research on countermeasures an examinee could take to fool the fMRI test.[383] One countermeasure considered is the possibility of an examinee that has extensively rehearsed the story he will be telling.[384] One study has already shown that there are different brain activation patterns in a person that is telling a spontaneous lie versus a rehearsed lie.[385] In that study, the story had been rehearsed for only a few minutes, but no testing has been conducted on an individual that has been instructed to take on a false identity such as an undercover police officer or CIA agent.[386] Simpler countermeasures may also be available for a person who wants to trick the fMRI scanner. Even the smallest actions by the examinee, such as jaw clenching or tongue movements, are capable of rendering the fMRI scan completely useless.[387] Some studies have found that as little as three millimeters of movement will cause a blurring on the scan.[388] In some cases, movement may not even be necessary to distort an fMRI reading – just thinking about another task or doing simple arithmetic can "muddy the underlying picture."[389]

Finally, what little research has been done may not be scientifically reliable. The people who tout the accuracy and reliability of fMRI are not unbiased scientific researchers, but for-profit companies.[390] Many of the experiments that have found high levels of accuracy for fMRI are led by researchers who are on the boards, are scientific advisors for, or are the holders of patents used by companies such as No Lie MRI or Cephos Corporation.[391] Furthermore, many of the studies conducted in conjunction with No Lie MRI and Cephos have neither been replicated by other researchers nor been published in peer-reviewed journals, both of which constitute important steps on the path to scientific validity and recognition.[392]

Therefore, it is no shock that fMRI was not able to meet a *Frye* or *Daubert* standard in court.[393] If a court of law does not recognize this

383. *See* GEORGE W. MASCHKE & GINO J. SCALABRINI, THE LIE BEHIND THE LIE DETECTOR 156-57 (4th ed. 2005), *available at* http://antipolygraph.org/lie-behind-the-lie-detector.pdf.

384. *See* Simpson, *supra* note 280, at 494.

385. *Id.*

386. *See id.*

387. Greely & Illes, *supra* note 370, at 404.

388. Ireland, *supra* note 275.

389. Greely & Illes, *supra* note 370, at 405.

390. Schauer, *supra* note 3, at 1202.

391. *See id.* at 1202 n.53.

392. *See id.* at 1201-02.

393. *See* Wilson v. Corestaff Servs. L.P., 900 N.Y.S.2d 639, 642 (Sup. Ct. 2010); Madrigal, *supra* note 326.

procedure as scientifically accurate and accepted in the scientific community, then employees should not be forced to submit to the procedure. One of the underlying reasons for the implementation of the EPPA was that employees were either being denied employment or fired based on an inaccurate device.[394] The state of the research surrounding fMRI currently parallels the concerns surrounding the polygraph at the EPPA's implementation. This is a device that employees need to be protected from, at the very least, until further research has been conducted.

Regardless of whether or not a polygraph can detect deception, many people think it does.[395] This belief can be very powerful, compelling a person to submit to a polygraph he never wanted to take in the first place or making him say things he normally would have kept to himself.[396] This same issue is present with fMRI, if not more so. Most employees probably have little to no knowledge about fMRI. However, they probably have, at some point, had an MRI, known someone who has had an MRI, or heard of an MRI. They are also likely familiar with a polygraph or a lie detector. When a person then hears that an MRI, which they know to be a reliable medical device, can now actually scan your brain and detect lies, that person may feel he has no choice but to submit to such a test. Besides feeling compelled, the employee also does not know he is being misled – he may have absolutely no clue that fMRI has not been scientifically proven to accurately detect deception and that the research supporting it is scanty and skewed. What he may have heard, though, is that two corporations now touting fMRI as a scientifically sound lie detector are attempting to sell their wares and gain common acceptance and usage in the court room. These corporations have compelling websites with research studies supporting them.[397] This only adds to the employee being led down a path he never wanted to walk in the first place. Employees need to be protected from this whirlwind and the best way to do that is to add fMRI to the EPPA.

VI. CONCLUSION

While scientists and inventors have tried many ways to unravel the mystery of a lie, today we are no closer to having a fool-proof method of

394. *See* 134 CONG. REC. S7503 (daily ed. June 9, 1988) (statement of Sen. Edward Kennedy).

395. Eggen & Vedantam, *supra* note 56.

396. *Id.*

397. *See e.g.*, *The Technology Behind Lie Detection*, *supra* note 288; NO LIE MRI, *supra* note 287.

lie detection than when the first polygraph was conceived over 110 years ago. People's belief in the accuracy of lie detectors is misplaced, which is the reason that the use of purported lie detection devices should be limited only to dire situations.

Under the EPPA as it is now, public and private sector employees are treated differently, leading to disparate levels of protection.[398] In order to ensure equal treatment of these two classes, the public sector exemption needs to be abolished. Generally, all employers should be confined to using a polygraph only in the most serious of circumstances, such as during the investigation of a specific theft or loss.

As technology evolves, the law must adapt. With traditional medical practices, such as MRI, now being manipulated to function as lie detection devices, the EPPA must be updated to make sure these new technologies do not evade the will of Congress. The amendments and modifications proposed by this note will resolve the weaknesses inherent in the EPPA as well as modernize the law to combat new and unforeseen technologies that endanger employees' rights.

David Barnhorn and Joey E. Pegram[*]

398. *See supra* Part III.D.

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