IN THE CRIMINAL COURT FOR SHELBY COUNTY, TENNESSEE AT MEMPHIS, DIVISION I

PERVIS TYRONE PAYNE,	)	
	)	
Petitioner,	)	
	)	NOS. 87-04409; 87-04410
	)	
vs.	)	
	)	
STATE OF TENNESSEE,	)	DIVISION I
	)	
Respondent.	)	

PETITION TO DETERMINE INELIGIBILITY TO BE EXECUTED PURSUANT TO T.C.A. § 39-13-203

COMES NOW, Petitioner, Pervis Payne, by and through undersigned counsel and pursuant to the Eighth and Fourteenth Amendments to the United States Constitution, Article I, § 16 of the Tennessee Constitution, *Atkins v. Virginia*, 536 U.S. 304, 321 (2002), *Hall v. Florida*, 572 U.S. 701 (2014), *Moore v. Texas*, 137 S.Ct. 1039 (2017), and newly amended T.C.A. § 39-13-203, and respectfully requests this court declare that Mr. Payne is ineligible to be executed because he is intellectually disabled.

I. INTRODUCTION

"[T]he Constitution 'restrict[s] ... the State's power to take the life of' *any* intellectually disabled individual."

Moore, 137 S. Ct. at 1048 (quoting *Atkins,* 536 U.S. at 321) (emphasis in original).

"Tennessee has no business executing persons who are intellectually disabled."

Payne v. State, 493 S.W.3d 478, 486 (Tenn. 2016).

Governor Bill Lee signed legislation enacted for the purpose of modernizing Tennessee Code Annotated § 39-13-203 to bring the definition of intellectual disability into compliance with the constitutional demands of *Atkins*, 536 U.S. 304, *Hall*¸ 572 U.S. 701, and *Moore*, 137 S.Ct. 1039. H.B. 1062, 112th G.A. (2021), http://tnga.granicus.com/MediaPlayer.php?view_id=610&clip_id=24757 (video recording of April 26, 2021, House Floor Session) (statement of Rep. Hawk at 1:01:51). Recognizing the need to create a procedure for persons like Mr. Payne who have not had the opportunity to present their claims due to a procedural void in Tennessee law, the legislature added a retroactivity section to T.C.A. §39-13-203, which specifically permits any person with a colorable claim of ineligibility for execution due to intellectual disability to access the Court. T.C.A. §39-13-203(g). The law was prompted by Mr. Payne's case. Mr. Payne meets all the criteria set forth in the statute and now moves this Court to declare him ineligible for the death penalty.

II. RELEVANT PROCEDURAL HISTORY

In 1988, Mr. Payne, was convicted of two counts of first-degree murder and one count of assault with intent to commit first degree murder. The court imposed death sentences on the murder convictions and thirty years imprisonment on the assault conviction. On direct appeal, the Tennessee Supreme Court affirmed Mr. Payne's conviction and sentence. *State v. Payne*, 791 S.W.2d 10 (Tenn. 1990). At the time of the trial and direct appeal, execution of the intellectually disabled was permitted. *See Penry v. Lynaugh*, 492 U.S. 302 (1989).

Mr. Payne has sought access to the courts for the purpose of adjudicating his ineligibility to be executed only to run into one procedural roadblock after another. Importantly, neither the State nor any court has questioned the underlying proof of Mr. Payne's intellectual disability in any of these proceedings. *See, e.g.*, *Payne v. State*, 493 S.W.3d 478 (Tenn. 2016); *Payne v. Carpenter*, et al., No. M2014-006880-COA-R3-CY, 2016 WL4l42485 (Tenn. App. Aug. 8, 2016); *Payne v. Carpenter*, et al., No. 13-1536-III (Davidson Cnty. Ch. Ct. filed Nov. 1, 2013); *Payne v. State*, No. W2013-01215-CCA-R28-PD (Tenn. Crim. App. July 29, 2013). Indeed, the Tennessee Supreme Court encouraged the Tennessee General Assembly "to consider whether another appropriate procedure should be enacted to enable defendants condemned to death prior to the enactment of the intellectual disability statute to seek a determination of their eligibility to be executed." *Payne v. State*, 493 S.W.3d at 492. The Legislature answered the call, and the Governor has signed the bill into law. With all procedural obstacles wiped away, Mr. Payne seeks his day in court.

III. LEGAL STANDARD

In *Atkins*, the United States Supreme Court barred the execution of intellectually disabled persons finding that doing so is "cruel and unusual" in violation of the Eighth Amendment. 536 U.S. at 312. The Supreme Court recognized:

> [Intellectually disabled] defendants in the aggregate face a special risk of wrongful execution because of the possibility that they will unwittingly confess to crimes they did not commit, their lesser ability to give their counsel meaningful assistance, and the facts that they are typically poor witnesses and that their demeanor may create an unwarranted impression of lack of remorse for their crimes.

Id. at 305. In outlawing the execution of intellectually disabled persons, the Court left to the states "the task of developing appropriate ways of enforcing the constitutional restriction" on the execution of the intellectually disabled. *See id*. at 321.

The Supreme Court's holding in *Atkins* directed that states may only enforce the prohibition on executing the mentally retarded, *not undermine it*. *Id.* at 317. The Supreme Court has also determined that liberty interests may be created by state statute. *Wolff v. McDonnell*, 418 U.S. 539, 556-58 (1974). The liberty interest at stake here – the right of an intellectually disabled prisoner to avoid execution – flows directly from the Eighth Amendment. *See Atkins*, 536 U.S. at 321. Specifically, Mr. Payne's liberty interest is derived from Tennessee's statutory prohibition on executing the intellectually disabled.

Tenn. Code Ann. § 39-13-203(b) prohibits the execution of intellectually disabled persons. Tenn. Code Ann. § 39-13-203(a) now defines intellectual disability as follows:

1. Significantly subaverage intellectual functioning;
2. Deficits in adaptive behavior; and
3. The intellectual disability must have been manifested during the developmental period, or by 18 years of age.[1]

[1] Although the statute seeks to modernize the definition of intellectual disability, it still varies from current medical standards with respect to age of onset. THE DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS, 34 (American Psychiatry Association,5th ed. 2013); ROBERT L. SCHALOCK, ET AL., INTELLECTUAL DISABILITY: DEFINITION, CLASSIFICATION, AND SYSTEMS OF SUPPORTS (American Association on Intellectual and Developmental Disabilities, 12th ed. 2021). However, as Mr. Payne

The retroactivity provision, Tenn. Code Ann. § 39-13-203(g), requires defendants currently sentenced to death to petition the trial court for a determination of intellectual disability. The petition "must set forth a colorable claim that the defendant is ineligible for the death penalty due to intellectual disability." T.C.A. § 39-13-203(g)(1). A "colorable claim" is one "that, if taken as true, in the light most favorable to petitioner, would entitle petitioner to relief." Tenn. S.Ct. R. 28, § 2(h). This Petition is supported by evidence which establishes that Mr. Payne is intellectually disabled and meets the Tennessee definition. He is categorically exempt him from execution.

IV. PERVIS PAYNE IS INTELLECTUALLY DISABLED.

Pervis Payne is indisputably intellectually disabled. Mr. Payne meets all three *Atkins* requirements, as well as those of the Tennessee statute. He has significantly subaverage intellectual functioning, significant adaptive deficits in each domain, and his disability manifested prior to age 18. Ex. A, Martell Report; Ex. B, Reschly Report.

A. Experts Agree: Mr. Payne is Intellectually Disbled.

All of Mr. Payne's IQ scores demonstrate that he has significantly subaverage intellectual functioning. Intellectual functioning incorporates the "common definitional characteristics of intelligence, such as reasoning, planning, solving

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easily meets the age of 18 criteria, this variance is of no consequence in this case. The statute is less onerous as to the adaptive behavior criteria in that the statute does not require significantly subaverage deficits, rather it merely requires "deficits." The lack of a modifier could be important in some cases. Here, as well, Mr. Payne plainly meets the current medical criteria for intellectual disability.

problems, thinking abstractly, comprehending complex ideas, learning quickly, and learning from experience." ROBERT L. SCHALOCK, ET AL., INTELLECTUAL DISABILITY: DEFINITION, CLASSIFICATION, AND SYSTEMS OF SUPPORTS 25 (American Association on Intellectual and Developmental Disabilities, 12th ed. 2021).. A person's IQ generally reflects intellectual functioning with standardized IQ instruments calibrated along a bell curve whereby 100 reflects the mean. An individual's IQ score represents a range and not a fixed number. *Hall*, 572 U.S. at 712. Deficits in intellectual functioning are commonly determined by an IQ score approximately two standard deviations below the mean adjusted for the standard error of measurement ("SEM"). *Moore v. Texas*, 137 S. Ct. 1039, 1045 (2017). An individual's IQ test score on any given test may fluctuate for a variety of reasons. These include the test-taker's health; practice effect from earlier tests; the environment or location of the test; the examiner's demeanor; the subjective judgment involved in scoring certain questions on the exam; and simple lucky guessing. *Id*. Equally important in the psychological community is the widely accepted scientific concept of norm obsolescence, also known as the "Flynn effect." Tennessee law requires the factfinder to consider both the SEM and the Flynn effect when evaluating proof of intellectual functioning. *Coleman v. State*, 341 S.W.3d 221, 242 n.55 (Tenn. 2011).

Mr. Payne exhibits deficits in intellectual functioning. According to the most recent testing performed by clinical psychologist Dr. Daniel Martell, Mr. Payne received a reported full-scale IQ score of 72. Ex. A, Martell Report.[2] Given that the

[2] Dr. Martell was the State's witness in the Robert Coe case. *Coe v. State* 17 S.W.3d 193 (Tenn. 2000).

norms on the Wechsler Adult Intelligence Scale ("WAIS-IV") which was administered are outdated, his corrected score is 68.4. *Id.* The standard error of measurement would place his IQ as low as 63.4.

Dr. Martell concluded:

> (1) Mr. Payne has significantly subaverage intellectual functioning based on valid, objective test scores that fall within the range of Intellectual Disability.
>
> (2) Mr. Payne exhibits significant deficits or impairments in all three domains of adaptive functioning (Conceptual, Social and Practical) at the level of "Mild" to "Moderate" severity.
>
> (3) Mr. Payne's intellectual and adaptive deficits originated in the developmental period.
>
> (4) Mr. Payne meets all of the criteria for Intellectual Disability pursuant to *Atkins v. Virginia*.

Dr. Martell also conducted neurocognitive testing to determine Mr. Payne's capacity for reasoning, problem-solving, planning, abstract thinking, academic learning, and learning from experience. The results revealed significantly subaverage functioning in these areas:

- Mr. Payne's reading skills are in the bottom 5th percentile of the population for his age;
- Mr. Payne's mathematics skills are below the bottom 0.1 percentile for his age;
- Mr. Payne's language functioning is significantly impaired, with evidence of expressive aphasia including dysnomia (an inability to find words for things), paraphasia (an inability to pronounce words correctly), and neurodevelopmental stuttering;
- Both his immediate and delayed memory are in the bottom 1st percentile, as is his auditory memory; and
- Testing of his frontal lobe executive functioning revealed deficits involving his capacity for:
    - divided attention and multitasking;

- impulse control;
- behavioral perseveration (i.e., a pathological repetition of behavior without self-awareness or control); and
- failure to maintain cognitive "set" (i.e., he has great difficulty keeping track of what he is supposed to be doing).

Ex. A, at 15.

Dr. Martell's findings support the findings of then Vanderbilt University Professor, Dr. Daniel Reschly, who found Mr. Payne to be intellectually disabled. In 2010, Mr. Payne was given a WAIS-IV by Dr. Reschly. His full-scale reported IQ score was 74, which corrects to 73. Ex. B, Reschly Report, p. 20. Given the standard error of measurement, the 2010 score reflects an IQ score as low as 67. In 1987, Mr. Payne was administered the Weschler Adult Intelligence Scale-Revised ("WAIS-R") and received a reported full scale score of 78, which, when corrected for norm obsolescence and considering the SEM, would fall as low as 70.3. In 1996, he was administered another WAIS-R and received a reported full-scale IQ score of 78, which, when corrected for norm obsolescence and considering the SEM, represents a score as low as 67.6. Dr. Martell and Dr. Reschley agree that all the IQ testing meets the criteria for significantly subaverage intellectual functioning.

Both experts agree that Mr. Payne has significant deficits in adaptive behavior. The medical community focuses the adaptive-functioning inquiry on adaptive *deficits* instead of adaptive strengths. *Moore*, 137 S. Ct. at 1050. ("[S]ignificant limitations in conceptual, social, or practical adaptive skills [are] not outweighed by the potential strengths in some adaptive skills."). "Deficits in only one of the three adaptive-skills domains suffice to show adaptive deficits." *Id*. The

three domains are: 1) the conceptual domain (i.e., language, reading, writing, money, time, and number concepts); 2) the social domain (i.e., interpersonal skills, self-esteem, gullibility, and social problem-solving); and 3) the practical domain (i.e., activities of daily living, use of community resources, money management, work skills, health, and safety awareness). ROBERT L. SCHALOCK, ET AL., INTELLECTUAL DISABILITY: DEFINITION, CLASSIFICATION, AND SYSTEMS OF SUPPORTS 30 (American Association on Intellectual and Developmental Disabilities, 12th ed. 2021).

Dr. Martell reviewed all of Mr. Payne's adaptive behavior data, including the testing discussed above, and opined that Mr. Payne has significant deficits. His opinion is based on solid data. Dr. Reschly concurs.

B. Family Observations Corroborate Expert Opinions

Rolanda Payne Holman, Mr. Payne's younger sister, observed many behaviors consistent with ID while watching Mr. Payne grow up. She is seven years younger than Mr. Payne. Ex. C, Aff. of Rolanda Payne Holman. Despite the age difference, Ms. Holman reports that Mr. Payne was unable to help her with her homework. Rolanda states that the family knew Mr. Payne struggled academically. *Id.* She describes how he could only follow instructions that were short and simple.

> From what I recall he was able to follow and do what was requested if the instructions were short and simple. Sometimes my mom would give a series of stuff to do, a litany of things, and then he couldn't remember to do it all. However, if she only told him two things to do such as clean the kitchen and vacuum then he'd remember. If you told him multiple things to do such as mow the yard, trim the trees and vacuum something is going to get left off.

Id. Mr. Payne could not comprehend complex questions. *Id.* He could not use an iron. *Id.* He would burn holes in his clothes when he ironed. *Id.* If the fabric was nice, his mother did the ironing. *Id.* Mr. Payne's mother did not allow him to wash clothes. *Id.* His parents accepted his limitations and did not pressure him to do better in school. *Id.*

Multiple witnesses report that Mr. Payne could not retain information. Given more than one thing to do at a time, he was incapable of retaining both. He could not memorize enough to pass an English test. Ex. D, Aff. of Mary Williams**.**

As a teenager, Mr. Payne worked for a short time at a Pizza Hut. His supervisor, Warren Monego, describes Mr. Payne as "slower mentally" and "mentally challenged." Ex. E, Dec. of Warren Monego. For example, Mr. Monego explains, "Simple instructions were posted at the workstations. But even after personalized training, Pervis needed to look at the instructions regularly, and had to be reminded frequently to look at the instructions. This was extremely unusual for an employee in a lay job." *Id.* Mr. Monego noticed Mr. Payne "was forever trying to hide the fact that he was mentally challenged." *Id.*

Mr. Payne helped his father, Carl Payne, with his painting business.[3] Ex. F, Aff. of Carl Payne. Carl Payne recalls, "Pervis could follow simple [oral] directions

[3] The paint was lead-based. Ex. F, Aff. of Carl Payne. Lead-based paint has been linked to intellectual disability. *See* Oscar Tarrago, et al., *Case Studies in Environmental Medicine, Lead Toxicity*, Agency for Toxic Substances and Disease Registry (https://www.atsdr.cdc.gov/csem/lead/docs/CSEM-Lead_toxicity_508.pdf) (last visited December 27, 2019); Ex. G, Lourdes Schnass, et al., *Reduced Intellectual Development in Children with Prenatal Lead Exposure*, ENVIRONMENTAL HEALTH PERSPECTIVES, Vol. 114, No. 5, p. 791 (May 2006).

or instructions … but I generally had to repeat them several times to be sure he understood. If the instructions had too many steps, he could not follow them." *Id.* Carl Payne never wrote down the instructions. *Id.*

Mr. Payne was developmentally delayed. Carl Payne states that Mr. Payne learned to walk and talk later than his siblings. *Id.* He could not fix meals for the family or do his own laundry. *Id.* Carl Payne describes Pervis Paynes' vocabulary as limited. *Id.* Mrs. Payne had to help him with his homework almost every night. *Id.* Mr. Payne stuttered until his later teenage years. *Id*. This stutter got worse when he was frustrated or excited. Irene Thomas, the Payne's next-door neighbor, recalls that Pervis Payne needed to be fed up until age 5. Ex. H, Aff. of Irene Thomas.

Mr. Payne's younger sister by five years, Tyrasha Payne, also remembered him struggling academically in school. "I remember that Pervis was challenged in school. He just couldn't comprehend English or Math but did somewhat better in Math than English. All through his school years, my mother was constantly meeting with his teachers about his poor academic performance." Ex. I, Dec. of Tyrasha Payne. She also describes how her mother had to pay special attention to him. *Id*. Her mother told her it was because Mr. Payne was born prematurely and did not develop properly until around age 2. *Id*. Their mother shopped for Mr. Payne's clothes all his life. *Id*. Even after he was a teenager and other kids had started shopping for their own clothes, she was still shopping for him. *Id.*

Mr. Payne's friend, Ruth Wakefield Johnson, states she always knew something was wrong with Pervis. Ex. J, Aff. of Ruth Wakefield Johnson. "We

would talk, and he always gave me the impression of blankness, he'd just be staring at me." *Id.* "Pervis did not think for himself." *Id.*

Mr. Payne could not count money or add up items purchased at a store. Ex. K, Aff. of Zac Hayslett. He struggled to read and had a very limited vocabulary. He would not read aloud, and teachers would not ask him to because they knew of his struggles. Ex. L, Aff. of Everlina Flowers Sloan. Pervis could not use a ruler or measuring tape. Ex. F, Aff. of Carl Payne.

Zac Hayslett, Mr. Payne's teenage best friend, played the organ at church and Mr. Payne played the drums when the normal drummer was out, but "Pervis could not follow a pattern or syncopation and a drum solo was out of the question." Ex. K, Dec. of Zac Hayslett. Zac recalls vividly that Pervis took longer to catch on to things than it took the rest of the musicians. *Id.* He states that Mr. Payne was "kinda slow" and would sometimes get frustrated that he could not learn. *Id.* Zac is younger than Mr. Payne but had to help him with words, as Mr. Payne had a very limited vocabulary. *Id.* According to Zac, Mr. Payne had no trouble getting to places he had been before; however, he struggled with new places. "Pervis didn't know street names and he didn't understand maps." *Id.*

Mr. Payne was gullible. He would go along with whatever was suggested without ever thinking of the consequences. Ex. M, Aff. of Sidney Thomas. When driving the church van, he would often be asked to make multiple stops, drop people off, and end up being late to church. *Id.* Vera Wherry, a neighbor, states that "people took advantage of Pervis." Ex. N, Aff. of Vera Wherry. If you needed

anything done, he would do it. At times people used him for rides because he had a car. *Id.*

C. Educators' Observations Corroborate Expert Opinions and Establish Mr. Payne's Intellectual Disability Manifested Prior to Age 18

Mr. Payne's school-aged peers and teachers consistently called him "slow." Ex. O, Dec. of Martha Fayne; Ex. K, Aff. of Zak Hayslett; Ex. P, Aff. of Mary Williams; Ex. L, Aff. of Everlina Flowers Sloan; Ex. Q, Aff. of Denise Wakefield Giles. One teacher called Mr. Payne "mentally retarded." Ex. O, Dec. of Martha Fayne. Affidavits indicate that the school system failed to provide Mr. Payne with needed educational resources. Ex. P, Aff. of Mary Williams. This was due in part to the fact that the school district's special education curriculum was insufficient. Ex. O, Dec. of Martha Fayne. Mr. Payne was unable to graduate, though he tried. Ex. R, Aff. of John William Scott (Payne's High School Principal). He attended school through the twelfth grade. *Id.*; Ex. O, Dec. of Martha Fayne. After failing the Tennessee Proficiency Exam five times, Mr. Payne dropped out of school. Ex. O, Dec. of Martha Fayne. The Tennessee Proficiency Exam is based on an eighth or ninth grade proficiency. *Id.* An average ninth grade student would be able to pass this test on the first try. *Id.*

Denise Giles was a classmate of Mr. Payne's from kindergarten through seventh grade. Ex. Q, Aff. of Denise Wakefield Giles. Ms. Giles tutored Mr. Payne and other remedial students. *Id.* Ms. Giles reports that Mr. Payne could not read, diagram sentences, or spell. *Id.* In seventh grade, Mr. Payne was reading at a first or second grade level. *Id.* He could not sound out a word but knew simple words like

cat and dog. *Id.* He did not understand when to use "ph" and when to use "f" or when to use "c" and when to use "k". *Id.* He had a hard time grasping even simple concepts. *Id.*

Ms. Giles would pull him out of the regular classroom and take him and the other remedial students to a different classroom to help them. *Id.* Ms. Giles was promoted to the eighth grade, but Mr. Payne was held back. *Id.* The teachers allowed Mr. Payne to cheat off other students' tests. *Id.* Even when copying, he had trouble spelling correctly. *Id.*

Beyond the peer tutoring he received, Mr. Payne was also getting special assistance from his teachers. Mr. Payne attended resource classes and was pulled out for both Math and English. Ex. S, Aff. of Mary Ella Payne; Ex. T, Aff. of Lovie Pryor; Ex. U, Aff. of Glenda Calhoun. His middle school social studies teacher, Everlina Flowers Sloan, describes Mr. Payne as "very slow" and states that Mr. Payne had a hard time comprehending the material and would invariably fail the examinations. Ex. L, Aff. of Everlina Flowers Sloan. Ms. Sloan would break the material down to a first or second grade level, but Mr. Payne still had difficulty finding the answers on his own. *Id.* In the end, Ms. Sloan would just point the answer out to him. *Id.* "I would let him retake the test and sit and help him get the answers to the test. I would read the questions to him, and sometimes I would just have to give him the answers." *Id.* Ms. Sloan believed that the proper placement for Mr. Payne was special education. *Id.* His handwriting was illegible. He could not read aloud. He could not keep two-step instructions in his mind simultaneously.

"Although Pervis was trying he just could not get it. He would become frustrated because he could not understand." *Id.*

Mr. Payne was placed in a ninth-grade arithmetic class for students who were not proficient in mathematics and needed individualized attention. Ex. V, Dec. of Joseph Parker. Mr. Payne failed the first six weeks of the class, causing his teacher to devote even more attention to him. *Id.* This was the only year Mr. Payne had mathematics in high school and the only year he passed the math portion of the Tennessee Proficiency Exam. *Id.*

Mr. Payne's ninth grade English teacher states that Mr. Payne was not a good reader. Ex. P, Aff. of Mary Williams**.** He had poor comprehension and writing skills. His spelling was "atrocious." *Id.* She explains in her declaration that students in resource classes were excused or omitted from some of the requirements. *Id.* For example, students had to complete a research and writing assignment, but Mr. Payne was incapable of completing this assignment. *Id.*

More than one teacher reports that Mr. Payne was not expected to do work on grade level and was simply given a grade based on his effort in resource classes. Ex. T, Aff. of Lovie Pryor; Ex. L, Aff. of Everlina Flowers Sloan. Teachers gave him additional help, which sometimes included just giving him the answers. Ex. L, Aff. of Everlina Flowers Sloan; Ex. Q, Aff. of Denise Wakefield Giles.

Martha Fayne, Mr. Payne's tenth-grade science teacher, who has a master's degree in Education, describes him as "intellectually disabled." Ex. O, Dec. of Martha Fayne. Ms. Fayne explains:

> Pervis was slow and had low comprehension. I remember having to give him individual help in order for him to pass the class. He didn't read well enough to understand the material on his own, and even when the material was explained to him, he had to be told over and over what to do. He couldn't retain instructions or information from one day to the next.

Id.

His high school Principal, John William Scott, states that Pervis had learning disabilities. Ex. R, Dec. of John William Scott. Mary Ella Payne, Mr. Payne's aunt by marriage, taught the resource reading class at Drummond Elementary where Mr. Payne was enrolled. Ex. S, Aff. of Mary Ella Payne. She confirms that Mr. Payne was in resource class. *Id.* She recalls he "had difficulty comprehending things." *Id.* Mary Ella Payne believes that Mr. Payne's parents "didn't really address any of his learning problems." *Id.* Rather, "[t]hey were more concerned with his religious education." *Id.* Mary Ella Payne confirms that Mr. Payne "had a limited vocabulary" and had difficulty following instructions that require multiple steps. *Id.*

Mary Williams, Mr. Payne's ninth-grade English teacher, describes him as a slow student who could never get it. Ex. P, Aff. of Mary Williams. She recalls that Pervis could not even memorize enough to pass a test. *Id.* Lovie Pryor, the elementary math program teacher, describes Pervis as a challenged child who struggled with language and the ability to reason. Ex. T, Aff. of Lovie Pryor.

D. Pervis Payne's Execution Would Be Constitutionally Illegal.

The Eighth Amendment to the United States Constitution excludes persons with intellectual disability from the death penalty. *Atkins v. Virginia*, 536 U.S. 304,

304 (2002). The Fourteenth Amendment made Eighth Amendment protections mandatory for the states. When the United States Supreme Court decided that persons with the intellectual disability are ineligible for the death penalty, it stripped the power of states to execute these individuals. Period. "[T]he Constitution 'restrict [s] ... the State's power to take the life of' *any* intellectually disabled individual." *Moore v. Texas*, 137 S. Ct. 1039, 1048 (2017) (quoting *Atkins*, 536 U.S. at 321) (emphasis in original).

When the Supreme Court reinstated the death penalty in 1976, it made clear that there are two fundamental pre-requisites to imposing the ultimate punishment: eligibility and selection. *Zant v. Stephens*, 462 U.S. 862 (1983); *Godfrey v. Georgia*, 446 US 420 (1980); *Gregg v. Georgia,* 428 U.S. 153 (1976). To be consitutional, a state statutory scheme must have in place a mechanism for determining who is eligible for the death penalty. If, and only if, a defendant is deemed eligible, the jury must conduct an individualized sentencing analysis to select those defendants for whom the death penalty should be reserved. The eligibility question is categorical. The selection question is individualized. The Supreme Court has held those persons ineligible for the death penalty are innocent of the death penalty. *Sawyer v. Whitley*, 505 U.S. 333 (1992).

Given the persuasive proof of Mr. Payne's intellectual disability, his execution would be illegal.

V. PRAYER FOR RELIEF

For the foregoing reasons, Mr. Payne requests that the Court:

1. Order a hearing to determine whether Mr. Payne is ineligible for execution due to his intellectual disability;

2. Enter judgment setting aside Mr. Payne's death sentences;

3. Order a new sentencing hearing;

4. Enter any and all other orders as justice requires.

Respectfully submitted this 12th day of May, 2021.

FEDERAL PUBLIC DEFENDER FOR THE MIDDLE DISTRICT OF TENNESSEE

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CERTIFICATE OF SERVICE

I hereby certify that a true and exact copy of this petition was served via United States Mail to opposing counsel, District Attorney General Amy Weirich and Asst. District Attorney General, Steve Jones, 201 Poplar Avenue, Suite 301, Memphis, TN 38103-1945 on the 12th day of May, 2021.

KELLEY J. HENRY

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BY ELECTRONIC MAIL

September 10, 2020

Kelley J. Henry
Supervisory Asst. Federal Public Defender
810 Broadway, Suite 200
Nashville, TN 37203

RE: Pervis Payne Examination

Dear Ms. Henry,

I am writing to share the findings and opinions from my examination and testing of Mr. Payne, and review of the case materials you have provided pursuant to the above captioned matter.

Referral Question

You have asked that I examine and test Mr. Payne in order to provide the Court with opinions regarding whether he meets the diagnostic criteria for Intellectual Disability pursuant to *Atkins v. Virginia*.

Summary of Opinions

Based on my examination, interviews, and review of the materials that I have been provided, I have reached the following opinions to a reasonable degree of psychological certainty:

(1) Mr. Payne has significantly subaverage intellectual functioning based on valid, objective test scores that fall within the range of Intellectual Disability.

(2) Mr. Payne exhibits significant deficits or impairments in all three domains of adaptive functioning (Conceptual, Social and Practical) at the level of "Mild" to "Moderate" severity.

(3) Mr. Payne's intellectual and adaptive deficits originated in the developmental period.

(4) Mr. Payne meets all of the criteria for Intellectual Disability pursuant to Atkins v. Virginia.

Qualifications of Examiner

I was an expert witness for the Government in Atkins v. Virginia, and I have since consulted on dozens of Atkins-related cases for both prosecutors and defense attorneys throughout the country.

I received a Bachelor's Degree in psychology with honors from Washington and Jefferson College (1980), a Master's Degree in psychology from the University of Virginia (1985), and a Ph.D. in clinical psychology from the University of Virginia (1989). I completed my clinical psychology internship specializing in forensic psychology at New York University Medical Center, Bellevue Hospital, and Kirby Forensic Psychiatric Center in New York City (1986-1987), and was awarded a Post-Doctoral Fellowship in Forensic Psychology, also at New York University Medical Center, Bellevue Hospital, and Kirby Forensic Psychiatric Center during which I specialized in forensic neuropsychology (1987-1988).

I am Board Certified in Forensic Psychology by the American Board of Forensic Psychology of the American Board of Professional Psychology, Diplomate Number 5620. I am a Fellow of the American Academy of Forensic Psychology; a Fellow and Past-President of the American Academy of Forensic Sciences; and a Fellow of the National Academy of Neuropsychology. I am licensed as a clinical psychologist by the State of California, License Number PSY15694.

I am also licensed as a clinical psychologist by the State of New York, License Number 011106.

I am currently an Assistant Clinical Professor of Psychiatry and Biobehavioral Sciences at the Semel Institute for Neuroscience and Human Behavior and the Resnick Neuropsychiatric Hospital of the David Geffen School of Medicine at UCLA. From 1992 to 1996 I was a Clinical Assistant Professor in the Department of Psychiatry at New York University School of Medicine.

I have authored over 100 publications and presentations at professional meetings, with a research emphasis on forensic issues involving forensic neuropsychological assessment, mental disorders, brain damage, intellectual disability, elder capacities, and violent criminal behavior.

I have been admitted to testify as an expert witness in more than two hundred cases, including testimony in both criminal and civil matters in federal and state courts throughout the United States. I have consulted and testified for both prosecutors and defense attorneys in criminal cases, as well as plaintiffs and defense attorneys in civil matters.

Basis for Opinions

Scope of Examination and Informed Consent

I personally examined Mr. Payne on 11/19/2019 and 11/20/2019 in a quiet, semiprivate conference room at the Riverbend Correctional Facility in Nashville, TN for a total of approximately nine (9) hours. Comfort breaks were taken as needed.

He was advised that I had been retained by your office, of the limits on confidentiality in this forensic context, and of the lack of any treating relationship between us. Mr. Payne was able to provide his informed consent to participate with this understanding.

Materials Reviewed

I have reviewed the background materials provided by your office:

- Munford Tennessee school records, including test results in achievement, intellectual functioning, grades, teacher descriptions, and grade progression.

- Test Record Forms for the Wechsler Adult Intelligence Test-Revised, administered to Mr. Payne on October 10, 1987 and March 25, 1996, and a partial record of the Stanford-Binet Intelligence Scale on March 25, 1996.

- Wide Range Achievement Test-Revised, partial record form, 1995 or 1996.

- Declaration by Martha Fayne, Munford High School teacher and counselor, August 10, 2017.

- Affidavit of Denise Wakefield Giles, Neighbor of the Payne family in same school class as Mr. Payne, September 24, 2017.

- Affidavit of Zac Hayslett, teen-age friend of Mr. Payne and Minister of Music for the Greater Community Temple in Memphis, August 13, 2017.

- Statement and Affidavit by Rolanda Holman, sister to Mr. Payne, January 6, 2012 J. Affidavit of Rolanda Holman, sister to Mr. Payne, September 23, 2017.

- Declaration by Warren Monego, employer of Mr. Payne from 1985-1988, July 28, 2010.

- Declaration of Joseph Parker, Munford High School Science and Math teacher, taught Mr. Payne in a 9th grade arithmetic class, August 10, 2017.

- Affidavit of Mary Ella Payne, Munford Drummond Elementary School teacher who taught Mr. Payne is a reading resource class, May 8, 2017.

- Declaration by Tyrasha Payne, younger sister of Mr. Payne, August 18, 2010.

- Affidavit of John William Scott, Head Master at Tipton Rosemark Academy, Principal at Munford High School in 1983-1984, May 8, 2017.

- Affidavit of Everlina Sloan, Tipton County School District, taught Social Studies classes to Mr. Payne when he was in 6, 7, and 8th grades, May 8, 2017.

- Statement of Andre Thomas, neighbor and classmate of Mr. Payne, undated.

- Affidavit of Sidney Thomas, lifelong associate of Mr. Payne who observed him in church and in other settings, May 7, 2017.

- Affidavit of Damon Wherry, classmate of Pervis Payne in elementary, middle, and high school, July 16, 2017.
- Affidavit of Mary Williams, 9 grade English teacher, June 28, 2017.
- Affidavit of Carl Payne, Mr. Payne's father, July 16, 2017.
- Affidavit of Vera Wherry, neighbor of Mr. Payne, July 16, 2017.
- Affidavit of Lovie Pryor, Mr. Payne's teacher in special math program, July 15, 2017.
- Affidavit of Darren McGraw, cousin to Mr. Payne, July 17, 2017.
- Affidavit of Irene Thomas, neighbor of Mr. Payne, July 18, 2017.
- Affidavit of Glenda Calhoun, 7" grade teacher, July 16, 2017,
- Affidavit of Ruth Wakefield Johnson, friend of Mr. Payne, July 15, 2017.
- Trial transcript, February 1998 trial, volumes 4 through 11.
- Report of Daniel J. Reschley, Ph.D., 09/26/2017.

Tests and Procedures Administered

During my examination I administered a battery of intellectual and neuropsychological tests and procedures including:

- Behavioral Observations and Mental Status Examination
- Structured Neuropsychological Interview
- Validity Indicator Profile
- Rey's 15 Items
- Test of Memory Malingering
- Wechsler Adult Intelligence Scale-IV
- Wechsler Memory Scale-IV
- Wide Range Achievement Test-IV
- Trail Making Test, Parts A and B
- Boston Naming Test

- Delis-Kaplan Executive Function System
  - Color-Word Interference Test
- Wisconsin Card Sort
- Luria's Tests of Graphomotor Sequencing and Inhibition
- Luria's Tests of Motor Sequencing and Control
- Hooper Visual Organization Test
- Line Bi-Section Test
- Adaptive Functioning History and Clinical Interview

Background Information

Mr. Payne's case, background, and family history have been extensively discussed elsewhere in the case materials, and will not be reiterated in detail here. Rather, information provided by him and others relevant to a determination of his intellectual and adaptive functioning will be presented below.

Family History

Mr. Payne reported that he was born on March 1, 1967 in Memphis, TN. His father, Carl Payne, is a high school graduate who worked as a painter and is now 77 years old. His mother, Bernice Payne passed away in 2005 at the age of 64 from lung cancer. She also was a high school graduate and worked in a curtain shade factory. He had a sister named Tanesha who was six yours younger, but is now deceased. He also has a sister named Rolanda who is now 45 and in good health.
He reported no family history of psychiatric disorder.

He is single, has never been married, and has fathered no children.

Educational History

Mr. Payne stated that he completed the 11th grade, but failed the 12th grade and did not graduate. He also reported that he failed the 7th grade and was held back. At first he denied placement in Special Education classes, but then explained that he was placed in a Reading Skills Class in 6th, 7th, and 8th grades. He stated that his aunt Mary Ella Payne worked for the school and was his remedial reading teacher.

His school records reflect that he was functioning significantly below grade level on standardized academic achievement testing in the 4th, 5th, 6th, and 7th grades, with skills in most areas still at the fifth-grade level by the time he was nine months into the 7th grade. His greatest weaknesses involved his English language skills, including vocabulary, reading comprehension, and total reading scores.

He was unable to pass the Tennessee Proficiency Test for language skills, failing it in the 10th, 11th, and 12th grades.

Employment History

After failing the 12th grade he went to work with his father as a painter's helper. He explained, "He would put me in a place where I couldn't mess up or else he would come and clean up."

He also said that he worked "for a season" at Pizza Hut.

Medical History

Mr. Payne reported that he was told he was born prematurely and underweight.

Currently, he suffers from hypertension that was diagnosed in 1995, and diabetes which was diagnosed in 2000. Both are treated with medication. He also stated that he has colitis which runs in his family. Finally, he reported that he suffers from glaucoma.

He denied any history of head injury, seizure, or cerebrovascular disease.

Psychiatric History

Mr. Payne denied any psychiatric history prior to his incarceration, and said that he currently receives no psychiatric treatment.

He also denied any history of suicidal ideation, stating, "I don't have that much courage."

Examination Findings

Behavioral Observations and Mental Status Examination

Pervis Payne is a 52-year-old African-American man who presented for testing wearing white prison-issued scrubs over a grey long sleeve t-shirt and tennis shoes. He had a full beard and wore a wooden necklace, and a head scarf with a white baseball cap.

From the outset he was friendly and overly familiar with me. He was cooperative and worked diligently throughout both days of examination and testing.

He was well oriented to the world around him, knowing who he was, where he was , and the approximate date and time. His motor behavior was graceful with no observable abnormalities of posture or gait.

His speech was produced at a normal rate and volume but with poor articulation characterized by mumbling, speech dysfluency, and occasional paraphasias. For example, he complained of a loss of motor endurance, which he referred to as, "indurement." While discussing his glaucoma he reported having his, "rectal burned out" rather than his retina. At other points he used the word, "over-re-ro" in an effort to say that he was overwhelmed; "sloffiness" for laziness; "arterial motives" for ulterior motives; and "you've'd" for used. He also said that he stutters and has had, "'pronounciation' problems always." The quantity of his verbal output was within normal limits, however.

His thoughts were expressed in a logical, coherent, and goal-directed fashion with no evidence of formal thought disorder. His thought content was free from fixed, false beliefs (i.e., delusions) or abnormal sensory experiences (i.e., hallucinations).

However, he did explain past episodes when he has been perceived to be psychotic as being related to his Pentecostal religious beliefs, during which he has been taken to another realm "in the Holy Spirit of God." For example, he reported this while relating what has been described as a psychotic episode after his colorectomy. He said that, "a surge hit me and my body was not strong enough to take the surge." He went on to describe that his body, "swirled" and that he

spoke strangely to attendants in a Pentecostal, "unknown tongue." "Me and God shook the whole hospital up. They could not deny the presence. They couldn't help but feel it." He then told me about having a near-death experience during which he saw Jesus and his mother in a vault before being sent back to his body.

He also related his belief that he is able to, "slip out of my body and then back into my body." While feeling that he is out of his body he described being able to leave his prison cell and travel out of the facility to visit his home. He called this, "mental projecting," and said, "I can go to my Dad's house and feel the Spirit that is there. Then I uses that in my prayer." He described the experience as, "like being rebooted," and referred to it as both, "supernatural," and "Spiritual Warfare." He shared his concern that doing this has made him forgetful. He also had some insight that other Pentecostals, "would not approve" because, "I've taken it to another level" that goes beyond what the Pentecostal religion teaches.

Emotionally his observable affect was right and broad in range and intensity, and this remains stable duringboth days of the examination. His affect was appropriately related to his mood and to the content of his thoughts. His underlying mood was inferred to be mildly anxious but otherwise euthymic. His insight was fair.

He described his appetite as, "pretty average," and reported no recent changes in his weight. He described his sleep as, "pretty good." He also described his social relationships and activities as, "pretty good."

When asked how he's been doing emotionally he replied that he experiences, "a mixture of emotions." He said that he has, "emotions everywhere," and that, "I meditates [sic] … to cool my emotions." Cognitively, he complained of being forgetful and having noticed a decrease in his attention span. With regard to speech and language he stated that he can, "use simple words," to express himself.

Neurocognitive Testing Results

Data Validity

In any high-stakes forensic examination such as this one, it is imperative to determine whether the individual being tested is putting forth their best effort, and to rule-out malingering. Therefore, I

administered a battery of both free-standing and embedded measures of effort to Mr. Payne.

These tests included both the Verbal and Nonverbal subtests of the Validity Indicator Profile; the Test of Memory Malingering; Rey's 15 Items; the WMS-IV Visual Memory II Recognition Trial; the WMS-IV Logical Memory II Recognition Trial; and Reliable Digit Span.

His scores on each of these measures indicated that he was performing to the best of his ability and was not malingering. Hence the test data obtained can be considered reliable and valid indicators of his current level of neurobehavioral functioning

Intelligence (IQ) Testing

During my examination and testing, Mr. Payne achieved a Full-Scale IQ score of 72 on the Wechsler Adult Intelligence Scale-IV. Adjusting that score for norm obsolescence (i.e., the "Flynn-effect") results in a Full-Scale IQ score of 68.4.[1] Thus, Mr. Payne by either score has significantly subaverage intellectual functioning that falls in the range of Intellectual Disability.

Achievement Testing

Testing with the Wide Range Achievement Test-IV shows that the learning problems that he had during his school years have endured into adulthood. Despite having completed the 11th grade, Mr. Payne functions at a first-grade level in math (placing him in the bottom 0.1 percentile for his age), and a sixth-grade level on reading and sentence comprehension (bottom 5-7 percentiles). He did demonstrate a relative strength for spelling, but with skills at the 8th grade level he is still functioning below his 11th grade educational level.

Attention and Speed of Information Processing

Mr. Payne exhibited mild impairment on a test of his visual attention and speed of information processing (Trails A). These deficits were also seen in mild-to-moderate impairments on the Symbol Search and Coding subtests of the WAIS-IV.

[1] Flynn Correction: 2019-2007 = 12 years x 0.3 = 3.6; FSIQ = 72 – 3.6 = 68.4.

Memory Testing

Some of Mr. Payne's greatest neurocognitive impairments during this examination involved memory and verbal learning. His scores on the Wechsler Memory Scale-IV placed both his Immediate and Delayed Memory abilities in the "Extremely Low" range of functioning, at the bottom 1% for his age (i.e. 99 percent of others of his age and education have better fundamental memory abilities).

His Auditory Memory score also places him in the "extremely Low" range of abilities, again in the bottom 1% of the population.

His only area of relative strength was for Visual Memory, where his score placed him in the "Low Average" range (at the bottom 12th percentile).

Language Functioning

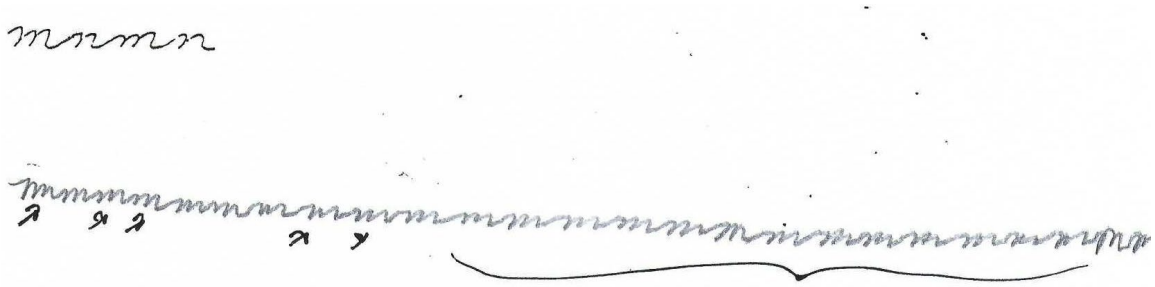
His language functioning is significantly impaired, with clinical evidence of expressive aphasia including dysnomia (an inability to find words for things), paraphasia (an impaired ability to pronounce words correctly), and neurodevelopmental stuttering.

His score on the Boston Naming Test, which evaluates his ability to find the words for common objects, was 1.5 standard deviations below expectation for his age, and 2.5 standard deviations below expectation for his level of education.

Frontal Lobe - Executive Functioning

Testing of Mr. Payne's frontal lobe "executive" functioning revealed multiple deficit areas involving his divided attention and multitasking; impulse control; behavioral perseveration (i.e. a pathological repetition of behavior without self-awareness or control); and failure to maintain cognitive "set" (i.e., he has great difficulty keeping track of what he is supposed to be doing).

Severe grapho-motor perseveration was seen on a test where he was required to write a line of alternating m's and n's, where his ability to switch was grossly impaired:



His performance on the Wisconsin Card Sort (a test of visual problem solving) was generally intact, however he exhibited significant impairment in his ability to keep track of what he was doing, resulting in a Failure to Maintain Set score that placed him below the bottom 1st percentile for his age and education.

On a test of his ability to inhibit common, learned responses in favor of novel ones, and to switch quickly between competing task demands (Delis-Kaplan Executive System Color-Word Test) his scores again placed him below the bottom 1st percentile for his age and education. This was seen in his scores for both speed and number of errors on the Inhibition and Inhibition/Switching trials.

Finally, he demonstrated mild impairment on a test of his ability to switch effectively between competing stimuli (Trails B) again indicating difficulty with set-switching and multitasking.

Visual Perception and Organization

Tests of Mr. Payne's visual perception and organization skills were within normal limits on the Line Bi-section test and the Hooper Visual Organization Test.

Evidence Regarding Intellectual Disability

The DSM-5 defines Intellectual Disability (ID) as a neurodevelopmental disorder that begins in childhood and is characterized by intellectual difficulties as well as difficulties in conceptual, social, and practical areas of living. The DSM-5 diagnosis of ID requires the satisfaction of three criteria:

1. Deficits in intellectual functions, such as reasoning, problem solving, planning, abstract thinking, judgment academic learning and learning from experience, confirmed by both clinical assessment and individualized, standardized intelligence testing;

2. Deficits in adaptive functioning that result in failure to meet developmental in socio cultural standards for personal independence and social responsibility. Without ongoing support, the adaptive deficits limit functioning in one or more activities of daily life, such as communication, social participation, and independent living, across multiple environments, such as home, school, work , and community; and

3. Onset of intellectual and adaptive deficits during the developmental period.

The DSM-5 definition of ID encourages a more comprehensive view of the individual than was true under the fourth edition, DSM-IV-TR. More importance is placed on clinical judgment with regard the presence of adaptive deficits, and less emphasis is placed on bright-line IQ cutoff scores. The DSM-5 has also placed significantly more emphasis on adaptive functioning and the performance of usual life skills as the hallmark indicia of intellectual disability.

Diagnostic Criterion A:
IQ and Neuropsychological Test History

The DSM-5 includes the following discussion with regard to evaluating Criterion A:

> Criterion A refers to intellectual functions that involve reasoning, problem solving, planning, abstract thinking, judgment, learning from instruction and experience, and practical understanding. Critical components include verbal comprehension, working

> memory, perceptual reasoning, quantitative reasoning, abstract thought, and cognitive efficiency. Intellectual functioning is typically measured with individually administered and psychometrically valid, comprehensive, culturally appropriate, psychometrically sound tests of intelligence. Individuals with intellectual disability have scores of approximately 2 standard deviations or more below the population mean, including a margin for measurement error (generally +5 points).
>
> * * * *
>
> Factors that may affect his scores include practice effects and the "Flynn effect" (overly high scores due to out-of-date test norms).
>
> * * * *
>
> Individual cognitive profiles based on neuropsychological testing are more useful for understanding intellectual abilities than a single IQ score. Such testing may identify areas of relative strengths and weaknesses, an assessment important for academic and vocational planning.
>
> IQ test scores are approximations of conceptual functioning but may be insufficient to assess reasoning in real-life situations and mastery of practical tasks. For example, a person with an IQ score above 70 may have such severe adaptive behavior problems in social judgement, social understanding, and other areas of adaptive functioning that the person's actual functioning is comparable to that of individuals with a lower IQ score. Thus, clinical judgment is needed in interpreting the results of IQ tests.[2]

Mr. Payne's IQ and Neurocognitive Functioning

During my examination and testing, Mr. Payne achieved a Full-Scale IQ score of 72. Adjusting that score for norm obsolescence (i.e., the "Flynn-effect") results in a Full-Scale IQ score of 68.[3] Mr. Payne thus has significantly subaverage intellectual functioning that falls in the range of Intellectual Disability.

This finding is consistent with Mr. Payne's history of past IQ testing, which has consistently shown his IQ to be significantly subaverage and

[2] DSM-5, p. 37.
[3] Flynn Correction: 2019-2007 = 12 years x 0.3 = 3.6; FSIQ = 72 – 3.6 = 68.4.

in the range of Intellectual Disability, placing his Flynn-adjusted Full-Scale IQ between 73 and 75.[4]

During my examination, I also did additional neurocognitive testing to look at his capacity for reasoning, problem-solving, planning, abstract thinking, academic learning, and learning from experience. The results of that testing revealed clinically significant and significantly subaverage functioning in the following areas:

- His reading skills are in the Bottom 5th percentile for his age
- His mathematics skills are below the bottom 0.1 percentile for his age
- His language functioning is significantly impaired, with evidence of expressive aphasia including dysnomia (an inability to find words for things), paraphasia (an impaired ability to pronounce words correctly), and neurodevelopmental stuttering.
- Both his Immediate and Delayed Memory are functioning in the bottom 1 percentile, as is his Auditory Memory.
- Testing of his frontal lobe executive functioning revealed deficits involving his capacity for:

    (1) divided attention and multitasking;

    (2) impulse control;

    (3) behavioral perseveration (i.e. a pathological repetition of behavior without self-awareness or control); and

    (4) failure to maintain cognitive "set" (i.e., he has great difficulty keeping track of what he is supposed to be doing).

[4] See Dr. Reschly's 09/26/2017 report, p. 20: 1987 WAIS-R =FSIQ = 75.3; 1996 WAIS-R FSIQ = 72.6; 2010 WAIS-IV FSIQ = 73.

Conclusion Regarding Mr. Payne's Intellectual Functioning

It is my opinion that Mr. Payne meets Criterion A based on test scores that place him within the range for a diagnosis of intellectual disability. Mr. Payne's impaired performance on the neuropsychological testing administered during this examination in conjunction with his current and prior IQ testing provides strong evidence of substantial impairment in intellectual functions that involve reasoning, problem solving, planning, abstract thinking, judgment, learning from instruction and experience, and practical understanding; as well as critical components that include verbal comprehension, working memory, perceptual reasoning, quantitative reasoning, abstract thought, and cognitive efficiency.

Diagnostic Criterion B: Significant Deficits or Impairments in Adaptive Functioning

The second major prong of the Intellectual Disability diagnosis requires evidence of impairment in Adaptive Functioning. *Global* impairment in adaptive functioning is not required for the diagnosis of Intellectual Disability. It is typical for adaptive strengths to co-exist with weaknesses in this population. However, the diagnosis itself is made based on the identification of adaptive weakness areas alone. Both the DSM-5 and American Association on Intellectual and Developmental Disabilities (AAIDD) criteria require impairment in one broad domain of functioning (i.e., Conceptual, Practical, or Social).

Mr. Payne exhibits a pattern of broad impairment in his abilities involving skills all three areas of Adaptive Functioning, including:

- The Conceptual Domain (i.e., language, reading, writing, money, time, and number concepts);
- The Social Domain (i.e., interpersonal skills, self-esteem, gullibility, social problem-solving); and
- The Practical Domain (i.e., activities of daily living, use of community resources, money management, work skills, health and safety awareness).

THE CONCEPTUAL DOMAIN

The **conceptual domain** involves skills in language, reading, writing, math, reasoning, knowledge, memory, and self-direction.

In this domain, there is both empirical and anecdotal evidence that Mr. Payne has significant impairments that cluster in three broad areas, including:

(1) functional academic skills:

(2) language skills; and

(3) concept formation and self-direction.

His record reflects a history of Conceptual Domain deficits in academic functioning that is verified by current achievement testing; and also includes failing both 7th grade and 12th grade, a repeated inability to pass the Tennessee Language Proficiency Test; descriptions from teachers of difficulty with reading comprehension; and placement in reading resource classes. His history also reflects impairment in his language skills, including stuttering and problems expressing himself verbally (expressive aphasia).

His school records indicate broad impairments in his functional academic skills from a very young age, with standardized testing in the fourth-grade placing his academic achievement two years behind, at the second-grade level. This included scores at or below the second-grade level for vocabulary, reading comprehension, word skills, math concepts, spelling, language, social science, and listening comprehension. Academic achievement testing in subsequent years (i.e. fifth, sixth, and seventh grades) revealed that his general academic functioning continued to be at least two grade levels below his actual grade and deteriorated further as the material became more difficult, despite repeating the seventh grade. This pattern of impairment across the spectrum of academic abilities would be indicative of the subaverage cognitive functioning associated with Intellectual Disability, rather than a specific learning disability.

As an adult, he continues to demonstrate impairment in his functional academic skills, as well as having deficits in memory and executive functioning identified by neuropsychological testing (see above). Mr. Payne was administered the Reading subtest of the Wide Range Achievement Test - Revised (WRAT-R) on 02/25/1996 when he was 28

years old, and his word reading ability was found to be at the 5th grade level. During my examination, testing with the Wide Range Achievement Test-IV showed that Mr. Payne functions at a first-grade level in math (placing him in the bottom 0.1 percentile for his age), and a sixth-grade level on reading and sentence comprehension (bottom 5-7 percentiles).

Evelena Flowers Sloan was Mr. Payne's Social Studies teacher in 6th, 7th, and 8th grades. In her sworn affidavit dated 05/08/2017 she stated:

> Pervis was very slow and had a hard time comprehending. I had to work one on one with him.
>
> When Pervis took a test he invariably would fail. I would let him retake the test and sit and help him get the answers to the test. I would read the questions to him, and sometimes I would just have to give him the answers. Pervis still had problems even when I was working one on one with him and breaking it down to the 1st or 2nd grade level. Even then I would have to point out the answer.
>
> Pervis's handwriting wasn't legible.
>
> Pervis stuttered and depending on the circumstances his stutter would become more pronounced.
>
> If the class was given instructions that had two steps, Pervis couldn't keep up with them in his mind. He might do the first step but then would ask "what did you say to do for the 2nd part?"
>
> Social studies class involved a lot of reading. I had students read aloud. Pervis did not want to read. He didn't know all the words and wasn't comprehending what he read.
>
> Although Pervis was trying he could not get it. He would become frustrated because he could not understand.

Glenda Calhoun taught Mr. Payne in the seventh grade. She stated in her 07/16/2017 sworn affidavit that:

> He was poor in reading but he always tried hard.
>
> Pervis went out for resource reading, which was a special program that gave extra help to a student having reading problems. When a child was having problems they would be referred to resource and then tested before being placed in the resource class. Being in resource reading allowed Pervis to have more time to take a test in any class.
>
> Pervis had trouble with all content area subjects because he had problems in reading and comprehension.

Mary Ella Payne was a resource reading teacher a Drummond Elementary School, and had Mr. Payne in her resource reading class. She stated in her sworn affidavit dated 05/08/2017 that:

> Pervis seemed to have difficulty in comprehending certain things. Some of his problem was reading and comprehending. Somewhere he missed his phonics and therefore it was so hard for him to comprehend how a word divided.
>
> When Pervis was in my resource reading class, and he was given something to do which had several steps, I had to keep reminding him of the steps.
>
> He had a limited vocabulary.

Lovie Pryor was a Title 1 special math program teacher at Drummonds Elementary School, and had Mr. Payne in her class. She stated in her 7/15/2017 sworn affidavit that:

> Pervis was a challenged child. Language and the ability to reason were his biggest problems.
>
> Pervis wasn't good in math but he did enough to pass. Students in the Title 1 program were given math problems they could solve even if this meant they were given first grade problems when they were in the eighth grade. Title 1 students were

> graded on their accomplishments in the special class not on being able to do grade level work.
>
> Pervis could not do a word problem. He couldn't do reasoning. He could never learn the multiplication tables.

Mary Williams, who was Mr. Payne's teacher for 9th grade English, stated in her sworn affidavit dated 6/28/2017 that:

> Pervis Payne was a slow student. At the time when Pervis was in school, programs were not in place to identify and to place students appropriately so they could receive all the help they needed.
>
> I believe that Pervis had a resource English class as well as my English class when this was the case they would receive their grades through the resource class. When a student was in resource they were excused or omitted from some of the requirements. If they could show even some progress they would get a satisfactory grade.
>
> Pervis was not a good reader. His comprehending and writing skills were very poor. His spelling was atrocious. He was a student who could never get it. He couldn't even memorize enough to pass a test. He just wasn't capable. He was just slow and smiling.
>
> In my class, the students were required to do a research and writing project. Pervis could not complete this assignment.

Joseph Parker, Mr. Payne's Science and Math teacher in the ninth grade stated in his declaration dated 08/16/2010:

> Pervis Payne was a student in my arithmetic class. That class was for students who were not proficient in math. These students needed individualized attention and instruction to grasp the concepts. Pervis failed the first six weeks, which intensified my focus on motivating Pervis to make an improvement. He ended up passing my class but I am extremely surprised that he passed the math portion of the Tennessee Proficiency Exam.

Mr. Payne's 10th grade Science teacher, **Martha Fayne**, stated in her 08/17/2010 declaration that:

> … Pervis was slow and had low comprehension. I remember having to give him individual help in order for him to pass the class. He didn't read well enough to understand the material on his own, and even when the material was explained to him, he had to be told over and over what to do. He couldn't retain instructions or information from one day to the next.
>
> … although he attended school through the 12th grade, he didn't graduate. The records indicate he took the Tennessee Proficiency Exam five times and failed each time, except for the math portion of one test he took in the ninth grade. This was unusual.

John William Scott, the principal at Munford high school while Mr. Payne was attending there, stated in his 05/08/2017 sworn affidavit that:

> Pervis had some learning difficulties.
>
> He really struggled in English.
>
> Pervis took the Tennessee Proficiency Test five times and still did not pass the reading, spelling and language sections. This test was based on 8th or 9th grade proficiency. However, Pervis could not pass it even when he was a senior in high school. He did not graduate from high school since he could not pass this test.

Denise Wakefield Giles, a neighbor of Mr. Payne's growing up and a member of his father's church started in her 09/24/2017 sworn affidavit that:

> We were in the same grade and in the same classroom from kindergarten through 7th grade. Pervis failed the 7th grade and I went on to the 8th grade while he repeated the 7th grade.
>
> Pervis was a remedial student.

Starting in the 3rd grade, the teachers would ask me to help with the slower students. Pervis was always one of the students I would tutor. … By the time we were in the seventh grade, I was taking Pervis and several other remedial students to a separate room where I tutored them. I would read a paragraph to them two times and then have them read the same paragraph. Even then, Pervis could not read the paragraph. He pointed to each word as he read and when he would get stuck I'd tell him to sound out the word. He wasn't able to sound out words. When Pervis was in the seventh grade, he was reading at the first or second grade level. He knew words like cat, dog, ear, and house but beyond that he had problems.

He couldn't spell. He was not able to understand when to use "ph" and when to use "f" or when a word started with a "k" or a "c".

When I questioned Pervis on the content of what I had read to him or what he had read, he never knew.

Pervis was way off on problem solving and remembering things. He had a hard time grasping even the simplest concept.

When we were going to have a test, the teacher had me go over the material with this group. Even then Pervis was not able to answer the questions on the test. Some of us students would hold up our paper and let Pervis copy our answers. Even though the teachers objected to cheating on tests they allowed Pervis to copy other student's answers. Even when copying he had trouble spelling the words correctly.

Pervis avoided reading. I never saw him reading and the teachers never asked Pervis questions or required him to read in class.

You could just forget trying to teach Pervis parts of speech. Subjects, verbs, prepositions and other parts of speech were beyond Pervis's ability. When I was tutoring the remedial students and asking them to diagram sentences, Pervis could never break down a sentence. It was too difficult for him, he just couldn't do it. He was never able to write a complex sentence.

Zack Hayslett, a Minister of Music at the Greater Community Temple in Memphis, TN and who grew up with Mr. Payne in his father's church stated is his 08/13/2017 sworn affidavit that:

> Pervis was kinda slow. He wasn't as quick to learn as the rest of us. I remember vividly that it took Pervis longer to catch on to something or understand everyday situations. Sometimes he'd give up frustrated because he just couldn't learn.
>
> I remember that Pervis had trouble reading in Sunday school. Even when he was 18 years old, he would stumble over words.
>
> Even though I was younger than Pervis I had to explain different words to Pervis, he had a very limited vocabulary.

Damon Wherry, who was in the same class as Mr. Payne in elementary and high school stated in his 07/16/2017 sworn affidavit that:

> Pervis stuttered a little bit and more when he got excited. We would say, "man, get it out."
>
> In high school even though we were in the same grade and in the same class, we knew his work was a couple grades behind. In books he wasn't that smart.
>
> Pervis never spoke out in class or volunteered to read. In class you could volunteer or if they thought you weren't paying attention the teacher would call on you . They never called on Pervis.
>
> I never saw Pervis reading a book.

Mr. Payne's second cousin, **Darren McGraw** stated in his 07/17/2017 sworn affidavit that:

> We were in the same Sunday school class and Pervis always had trouble reading.
>
> Sometimes, if I was working on something, I would ask Pervis to read instructions or something for me. Then when I would read

it for myself, it said something completely different from what Pervis had read.

Pervis pretty much could not read. However, he had a way of working with his deficits so they weren't noticeable. He'd say something like he couldn't see because there was not enough light or he needed glasses or something along that line.

Mr. Payne's father, **Carl Payne**, states in his 07 16 2017 sworn affidavit that:

Pervis Payne is my oldest child.

It took Pervis longer to walk and longer to talk than my other children.

Pervis stuttered up until the time he was in the 12th grade.

Pervis does not have a large vocabulary. He used simple sentences.

Pervis is a poor speller.

Pervis didn't read unless he absolutely had to. When he was in school, we used to have to make him read. My wife had to help him get his lessons every night. Pervis needed help with his homework most of the time.

I tried to teach him, but he was not able to use a tape measure or ruler and figure out the amount of paint needed. I could not let Pervis bid on a job.

Mr. Payne's younger sister **Tyrasha Payne** stated in her 08-18-2010 declaration that:

Pervis Payne is my older brother. Pervis is 5 years older than me.

When I was growing up, my mother gave special attention to Pervis. She told me that Pervis was born very premature and didn't develop normally until he was two years old.

> I remember that Pervis was challenged in school. He just couldn't comprehend English or math, but did somewhat better in math than English. All through his school years, my mother was constantly meeting with his teachers about his poor academic performance.

Rolanda Holman, Mr. Payne's youngest sister, stated in her 01/06/2012 sworn affidavit that:

> He is 7 years older than I am and my only brother. I have always called him Bubba.
>
> If I needed help with my homework, we knew that Bubba was not the person to ask. My sister helped me, or if she couldn't my older cousin would come over to help. Bubba was challenged academically.

In a subsequent declaration dated 09/23/2017 Mr. Payne's youngest sister **Rolanda Holman** stated:

> Once in a while Bubba will write me a short note to tell me to put money on his books and sometimes he sends a card. There are some insufficiencies with his grammar, spelling and punctuation but I know what he is saying.

Conclusion Regarding Adaptive Impairment in the Conceptual Domain

The Diagnostic and Statistical Manual of Mental Disorders-5th Edition characterizes the various severity levels for adaptive impairments seen in Intellectual Disability. Based on the evidence summarized above, Mr. Payne's level of functioning is best captured by the DSM-5 description of "mild" severity in the **conceptual domain**:

> For preschool children, there may be no obvious conceptual differences. For school age children and adults, there are difficulties in learning academic skills involved in reading, writing, or arithmetic, time, or money, with support needed in one or more areas to meet age – related expectations. In adults, abstract thinking, executive function (i.e., planning, strategizing, priority setting, and cognitive flexibility), and short-term memory, as well as functional use of academic skills (e.g., reading, money management), are impaired. There is a

> somewhat concrete approach to problems and solutions compared with age–mates.[5]

THE SOCIAL DOMAIN

The **social domain** refers to empathy, social judgment, interpersonal communication skills, the ability to make and retain friendships, gullibility and vulnerability to manipulation, and similar capacities.

Mr. Payne's record also reflects deficits in his Social Domain functioning including impairment in age-appropriate conversion skills; having children several years younger as playmates; problems with self-esteem secondary to his poor academic performance and placement in resource classes resulting in mocking from his peers including being called "Pervis the Pervert," "Payne in the Ass;" or "Popeye" for his bulging eyes. His gullibility is also documented in the records as involving being taken advantage of by others, and an inability to think through a situation and what the consequences of his decisions would be.

Sidney Thomas indicated that he has known Pervis Payne all his life. In his sworn affidavit dated 05 07 2017 he stated:

> Pervis stuttered a bit and when he got anxious and wanted to get a word out he would stutter more.
>
> I believe that Pervis could be easily tricked by people. People took advantage of him, sometimes when you are kind people take advantage of you. A couple of times when Pervis was sent to pick up people for church someone along the way would ask him to drop someone off somewhere or pick up something at a store or bring it to them and he would be late getting to the church. It seems that Pervis was not able to think through a situation and see what the consequences might be.

Vera Wherry, who is from Mr. Payne's neighborhood and grew up with him riding the same school bus and attending the same church, stated in her 07/16/2017 sworn affidavit that:

> People would take advantage of Pervis. If there was anything you needed he would do it. At times people were using him to

[5] DSM-V, p. 34.

> drive them here and there. Since Pervis worked with his dad, he had his own ride and money for gas.

Mr. Payne's father, **Carl Payne**, states in his 07/16/2017 sworn affidavit that:

> Pervis could be tricked and fooled by others sometimes. However, Pervis could not see it that way.

Conclusion Regarding Adaptive Impairment in the Social Domain

The Diagnostic and Statistical Manual of Mental Disorders - 5th Edition (DSM-5) characterizes the various severity levels for adaptive impairments seen in Intellectual Disability. Based on the evidence summarized above, Mr. Payne's level of functioning is best captured by the DSM-5 descriptions for "Mild" severity in the **social domain.**

Mild impairment in the social domain is described as follows:

> Compared with typically developing age–mates, the individual is immature and social interactions. For example, there may be difficulty in accurately perceiving peers' social cues.
>
> Communication, conversation, and language are more concrete or immature than expected for age. There may be difficulties regulating emotion and behavior in an age–appropriate fashion; these difficulties are noticed by peers in social situations. There is limited understanding of risk in social situations; social judgment is immature for their age, and the person is at risk of being manipulated by others (gullibility).[6]

THE PRACTICAL DOMAIN

The **practical domain** centers on self-management in areas such as personal care, job responsibilities, money management, recreation, and organizing school and work tasks.

The records also establish impairment in Mr. Payne's Practical Domain functioning, including: Pica (eating dirt); difficulties with grooming, cooking, and shopping for himself as a teenager; damaging clothing in

[6] DSM-5, p. 35.

the laundry; an inability to measure or "cut in" ceilings, windows, or doors that undermined his ability to help in his father's painting business; engaging in dangerous behaviors like wandering off at the Mall that placed his health and safety at risk as a child; and difficulties learning his job responsibilities at Pizza Hut. He required extensive external supports to accomplish everyday tasks at home and at work.

Irene Thomas was the next-door neighbor of the Payne family. She stated in her sworn affidavit dated 07/18/2017 that:

> I knew that Pervis stuttered but he was around so much I was used to it.
>
> I heard that they had to feed Pervis until he was about five years old. I heard that he would just sit at the table and wait for food to be put in his mouth.

Zack Hayslett, a Minister of Music at the Greater Community Temple in Memphis, TN and who grew up with Mr. Payne in his father's church stated is his 08/13/2017 sworn affidavit that:

> Pervis was a spare drummer who played occasionally when the regular drummer was absent. Pervis could not follow a pattern or syncopation and a drum solo was out of the question.
>
> I recall going to the store with Pervis and adding up what he wanted to purchase for him so he would know if he had enough money. He could add one or two items but if it went to double digits he could not add that in his head.
>
> Pervis didn't know street names and he didn't understand maps. For example, if someone was giving Pervis directions that he was writing down, and he was told to turn onto Wright Street Pervis would write down "Rite" Street and then of course he could not find the street.

Sidney Thomas states that he has known Pervis Payne all his life. In his sworn affidavit dated 05 07 2017 he stated:

> I worked a lot at the church along with Pervis and his dad, pastor Carl Payne. When his dad told him to do something such as go and pick up supplies, paintbrushes, etc. his dad might

> have to tell him two or three times to make sure that Pervis understood.

Warren Monego, the manager of the Pizza Hut where Mr. Payne worked and his direct supervisor there, stated in his 07/28/2010 declaration:

> Pervis Payne was slower mentally than the other employees. I considered him to be mentally challenged.
>
> Most employees could be trained by watching other employees, but Pervis couldn't. I had to take the time to personally show him what to do. Simple instructions were posted at the workstations, but even after personalized training, Pervis needed to look at the instructions on a regular basis, and had to be reminded frequently to look at the instructions. This was extremely unusual for an employee in a lay job. He was forever trying to hide the fact that he was mentally challenged.

Mr. Payne's father, **Carl Payne**, states in his 07/16/2017 sworn affidavit that:

> Pervis Payne is my oldest child.
>
> It took Pervis longer to walk and longer to talk than my other children.
>
> Pervis stuttered up until the time he was in the 12th grade.
>
> Pervis never prepared meals for the family and he did not do his own laundry.
>
> Pervis was able to be a helper to me in our painting business. … Pervis could follow simple directions or instructions that I gave him orally but I generally had to repeat them several times to be sure he understood. If the instructions had too many steps he could not follow them. I never gave Pervis written directions.
>
> I tried to teach him, but he was not able to use a tape measure or ruler and figure out the amount of paint needed. I could not let Pervis bid on a job.

Mr. Payne's younger sister **Tyrasha Payne** stated in her 08-18-2010 declaration that:

> Pervis Payne is my older brother. Pervis is 5 years older than me.
>
> When I was growing up, my mother gave special attention to Pervis. She told me that Pervis was born very premature and didn't develop normally until he was two years old.
>
> I remember that my mother shopped for all of Pervis's clothes as he was growing up. Even as a teenager, when most boys were shopping for themselves, she continued to do his shopping. She also laid out his clothes for him to wear in the mornings.

Rolanda Holman, Mr. Payne's youngest sister, stated in her 01/06/2012 sworn affidavit that:

> He is 7 years older than I am and my only brother. I have always called him Bubba.
>
> Bubba also attempted to cook on a regular basis, but I wouldn't eat what he cooked. My sister and I still joke about his failed attempts to cook fried chicken. He would always get the grease too hot and smoke up the kitchen. The outside of the chicken looked done but the inside was raw. My mother told him time after time to let it cook at a lower temperature, but he never got it right.

In a subsequent declaration dated 09/23/2017 Mr. Payne's youngest sister **Rolanda Holman** stated:

> When I am talking to Bubba and telling him something if it is not something simple I may have to explain more or say it a different way. If I am talking about my job or something complex that is what I have to do.
>
> Bubba can understand and answer simple questions but if the question is complex he may say "now what do you mean." He may ask a question to help him understand the question you asked.

When Bubba was younger and living at home, he was able to follow simple directions. From what I recall he was able to follow and do what was requested if the instructions were short and simple. Sometimes my mom would give a series of stuff to do, a litany of things, and then he couldn't remember to do it all. However if she only told him two things to do such as clean the kitchen and vacuum then he'd remember. If you told him

multiple things to do such as mow the yard, trim the trees and vacuum something was going to get left off.

Sometimes Bubba would iron his own clothes and burn a hole in them because he had the temperature too high. When it came to good materials mom would iron his clothes.

Mom would not let him wash clothes. He knew how to wash his paint clothes but as far as washing good clothes mom washed those. He may put in too much washing powder.

My sister, Bubba and I learned social skills by being actively involved in church. My sister and I would get up and read scripture in church. Bubba didn't read, so he couldn't do that.

Bubba's vocabulary is basic, he uses simple words. I don't know if he would know how to use complex words. Sometimes I need to ask him to help me understand when he's trying to tell me something.

Bubba couldn't help us with homework.

At one time Bubba worked at the Pizza Hut but he had problems with making pizza.

I don't think Bubba set any long-term goals and plans for himself. He was happy just finishing the job he was working on.

Bubba knew how to check oil in a car but not how to change the oil. Dad changed the oil in the cars and did maintenance on the vehicles. Dad taught Bubba how to change a flat tire. Anything hands-on Bubba could do. If you gave him instructions to read that would be difficult for him, however if you showed him and told him step-by-step, he would learn better.

> My mom did everything for him. He'd say what he needed and she enabled him.

Conclusion Regarding Adaptive Impairment in the Practical Domain

The Diagnostic and Statistical Manual of Mental Disorders - 5th Edition (DSM-5) characterizes the various severity levels for adaptive impairments seen in Intellectual Disability. Based on the evidence summarized above, Mr. Payne's level of functioning is best captured by the DSM-5 descriptions of "Moderate" severity in the **practical domain**.

Moderate impairment in the practical domain is described as follows:

> The individual can care for personal needs involving eating, dressing, elimination, and hygiene as an adult, although an extended period of teaching and time is needed for the individual to become independent in these areas, and reminders may be needed. Similarly, participation in all household tasks can be achieved by adulthood, although an extended period of teaching is needed, and ongoing support will typically occur for adult level performance. Independent employment in jobs that require a limited conceptual and communication skills can be achieved, but considerable support from coworkers, supervisors, and others as needed to manage social expectations, job complexities, and ancillary responsibilities such as scheduling, transportation, health benefits, and money management. A variety of recreational skills can be developed. This typically requires additional supports and learning opportunities over an extended period of time. Maladaptive behavior is present in a significant minority and causes social problems.[7]

Diagnostic Criterion C: Onset of Intellectual and Adaptive Deficits During the Developmental Period

Both the record and my clinical examination make a clear and unequivocal case that the onset of Mr. Payne's Intellectual Disability occurred during the developmental period.

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[7] Ibid.

Summary of Opinions

Based on my examination, interviews, and review of the materials that I have been provided, I have reached the following opinions to a reasonable degree of psychological certainty.

Opinion with Regard to Intellectual Functioning

As noted above, it is my opinion that Mr. Payne has significantly subaverage intellectual functioning based on valid, objective test scores within the range of intellectual disability.

Opinion with Regard to Impairments in Adaptive Functioning

Mr. Payne exhibits significant deficits or impairments in all three domains of adaptive functioning (Conceptual, Social and Practical), at the level of "Mild" to "Moderate" severity. His adaptive impairments are clearly related to his underlying cognitive limitations. There is substantial "convergent validity" from anecdotal, contemporaneous, and empirical data sources supporting the conclusion that Mr. Payne functions adaptively in the range of Intellectual Disability, which meets the second diagnostic prong.

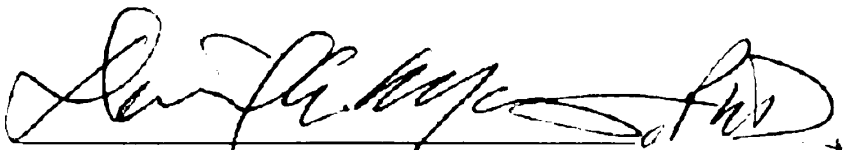
Opinion with Regard to Age of Onset

It is my opinion that Mr. Payne's intellectual and adaptive deficits find their origin in the developmental period. The data discussed above clearly show that he was exhibiting impairments in conceptual, social, and practical adaptive abilities during his development prior to age 18.

Based on these findings, is it clear that Pervis Payne meets all of the criteria for a diagnosis of Intellectual Disability.

Thank you for the opportunity to evaluate this interesting case. If you have any questions, please feel free to contact me directly any time at (949) 230-7321.

Sincerely,



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EXPERT WITNESS REPORT OF DANIEL J. RESCHLY REGARDING PERVIS PAYNE

Executive Summary

1. Mr. Pervis Payne is a person with Intellectual Disability within the meaning of the United States Supreme Court's decisions in *Hall v. Florida* and *Moore v. Texas,* consistent as well with the criteria established by the (a) American Psychiatric Association (APA) Diagnostic and Statistical Manual of the Mental Disorders (5th Ed.) (DSM 5; 2013) (Hereafter DSM 5); (b) the American Association on Intellectual and Developmental Disabilities (AAIDD) Classification Manual (11th Ed.) (2010) (Hereafter AAIDD-11); and (c) Tenn Code Ann. Section 39-13-203, when that statute is interpreted consistent with the DSM-5 and AAIDD-11 standards.
2. Mr. Payne meets the criteria for significantly sub-average intellectual functioning as defined by DSM-5 and AAIDD-11, *Hall v. Florida* and *Moore v. Texas,* and consistent with Tenn Code Ann. Section 39-13-203. Mr. Payne's functional intelligence is significantly subaverage compared to population normative standards.
3. Significant deficits in adaptive behavior were identified in Mr. Payne's childhood and young adult performance, particularly in the conceptual and practical skills domains of adaptive behavior. The adaptive behavior deficits in everyday performance are associated with the significantly subaverage functional intelligence. The adaptive deficits identified meet intellectual disability criteria established by DSM-5 and AAIDD-11.
4. Mr. Payne had significant limitations in intellectual functioning and adaptive behavior during the developmental period, thus meeting the third prong of the ID diagnosis established by DSM-5 and AAIDD-11.
5. Mr. Payne meets the three prongs of the ID definitions cited in paragraph 1, that is, he displays significantly subaverage functional intelligence, significant deficits in adaptive behavior, and ID presence during the developmental period of birth to age 18. Mr. Payne therefore is a person who is Intellectually Disabled, and he was Intellectually Disabled in 1987 at the time of the offense in this matter.

Expert Witness Qualifications

6. My name is Daniel J. Reschly. I am a nationally certified school psychologist and expert in mild intellectual disability. I am Professor of Education and Psychology Emeritus at Peabody College, Vanderbilt University where I chaired the top ranked Department of Special Education in the U.S. from 1998-2006. I joined the Vanderbilt faculty in 1998. I was

a professor in the Department of Psychology at Iowa State University from 1975 to 1998 where I also directed the graduate School Psychology Program and achieved the rank of Distinguished Professor of Psychology (top 5% of ISU faculty). My teaching and research are focused on the identification, treatment, and outcomes for persons with mild intellectual disability and learning disabilities and analysis of disproportionate minority representation in various programs. I have a Ph.D. in School Psychology from the University of Oregon. I obtained my M.A. in School Psychology from the University of Iowa, and my B.S. from Iowa State University. My career as a college professor for 43 years was devoted to educating school psychologists and special education teachers, and to research on the identification and treatment of persons with disabilities.

7. The focus of my evaluation was to determine if Mr. Payne met the criteria for the intellectual disability (ID) diagnosis, utilizing information obtained from interviews and measures of intellectual and educational competencies as well as records from prior evaluations, mitigation interviews, and documents made available to me by Mr. Payne's counsel. All facts set forth in this report are based on my personal knowledge, research and analysis, conducted in accordance with the generally accepted norms of my profession.
8. I am a Nationally Certified School Psychologist (NCSP), National Association of School Psychologists Certificate #14126, and practiced as a school psychologist in Iowa, Oregon, and Arizona. My current status as an NCSP means that I meet the criteria for school psychology certification/licensure in 38 states (https://www.nasponline.org/standards-and-certification).
9. I have published over 100 articles, chapters, and books on the topics of mild intellectual disability, school psychology professional practices, and the assessment of disabilities in minority children and youth. I received a Lifetime Achievement Award and three Distinguished Service Awards from the National Association of School Psychologists, the Stroud Award, and was appointed to Fellow of the American Psychological Association and the American Psychological Society. I have substantial clinical experience diagnosing individuals with ID, including teaching and supervising students in making such diagnoses.
10. I taught in school psychology programs at the University of Arizona and Iowa State University where I was responsible for educating graduate students in high incidence disabilities including mild intellectual disability, specific learning disability, and behavior

disorders. I taught the classes on intellectual assessment to graduate students in the school and counseling graduate programs including specific instruction in the Wechsler preschool, children, and adult scales. As part of this instruction I was responsible for ensuring competence in administration, scoring, and interpretation of the Wechsler Adult Intelligence Scale and other commonly used measures as well as ensuring background knowledge in tests and measurement, statistics, intellectual theories and development, and cultural influences on intellectual performance. The determination of mild intellectual disability and specific learning disability were key competencies developed in these courses. Since joining the faculty at Vanderbilt University I have been responsible for teaching educational assessments, tests and measurements, and measures of social competencies and adaptive behavior.

11. My training, experience, and leadership in school psychology are especially relevant to the diagnosis of Mild Intellectual Disability since most such diagnoses are first made, if at all, during the school-age years of 5 to 18. Initial diagnosis of more severe levels of ID usually occurs during the pre-school years, often at or soon after birth. In contrast, if the initial diagnosis of *Mild* ID is made, it typically is prompted by teacher referral due to chronic educational failure. The next step in the process should be a comprehensive evaluation typically conducted by a school psychologist employed by a public school system. In fact, school psychologists make more diagnoses of mild ID than any other professionals including those in various specialties of psychology, education, and medicine.
12. In this case I am working as an expert in Mild Intellectual Disability based on my extensive experience and accomplishments with this diagnostic group. I have been accorded expert witness status and delivered testimony in state and federal courts on 25 cases regarding issues related to Mild Intellectual Disability and the identification of children and adults with disabilities. I provided evaluations and consultation to attorneys in an additional 30 cases that were settled prior to hearings or my findings did not agree with attorneys' approaches to the case. A list of cases appears in my *curriculum vitae* at pp. 45-47.
13. I chaired the National Academy of Science (NAS) Panel on Disability Determination in Mental Retardation, and co-edited the resulting report (Reschly, Myers, & Hartel, 2002), published as "*Mental Retardation: Determining Eligibility for Social Security Benefits*." (Washington DC: National Academy Press, 2002,

http://www.nap.edu/catalog/10295.html?se_side). The Panel's report was designed to guide the Social Security Administration's decisions regarding eligibility for benefits due to Intellectual Disability (ID) for children, adolescents, and adults and, as part of that effort, it was called upon to review and interpret various definitions of ID. The NAS Panel ultimately adopted an ID definition that was highly influenced by the American Association on Mental Retardation Manual on Classification (Luckasson et al., 1992) with the exception that we identified fewer and more general adaptive behavior domains. Our approach to adaptive behavior preceded and likely influenced the AAMR/AAIDD (Luckasson et al., 2002; Schalock, et al., 2010) and APA-DSM 5 (2013) adoption of three broad domains of adaptive behavior in revisions of their classification manuals.

14. I also was a member of the National Academy of Science panels on *Standards-Based Reform and the Education of Students with Disabilities* (report issued in 1997, see McDonnell, McLaughlin, & Morison, 1997) and *Minority Students in Special and Gifted Education* (report issued in 2002, see Donovan & Cross, 2002).
15. I served as an Administrative Law Judge in Iowa from 1988-1998, conducting hearings and deciding cases involving the provision of educational services to students with disabilities. In this role I interpreted and applied federal and state legal requirements in the resolution of cases. A list of cases is provided in my *curriculum vitae.*
16. Attached is a copy of my *curriculum vitae* that provides further details of my experience, list of publications, and legal cases in which I provided evaluations, expert testimony at trial or deposition.
17. I was hired by counsel for Mr. Pervis Payne as an expert in intellectual disability, special education, and intellectual assessment.

Defining Intellectual Disability

18. The conceptual definitions and classification criteria for Intellectual Disability (ID) have evolved over the last 100 years. An early and widely cited traditional ID definition was formulated by Doll (1941). This definition defined mental deficiency, an earlier term for ID, as social incompetence due to mental subnormality that is developmentally arrested, obtains at maturity, is of constitutional origin, and is essentially incurable. The key theme in this

definition is social incompetence (an earlier term for adaptive behavior) that is related to low intellectual functioning. The condition must appear by maturity, although it may not be diagnosed until developmental maturity has been attained. For example, evidence may exist in a variety of forms that an adult was a person with ID as a child, but for any one of a number of reasons, the ID condition may not have been identified until the adult years.

19. The American Association on Mental Retardation (AAMR), recently renamed as the American Association on Intellectual and Developmental Disabilities (AAIDD), is the authoritative international organization regarding definition and classification in mental retardation-intellectual disability (Reschly, 1992, 2013). The title of this organization was changed in 2008 to the American Association on Intellectual and Developmental Disabilities (AAIDD). In this report I use AAIDD to refer to official publications of the organization.
20. The American Association on Intellectual and Developmental Disabilities is the authoritative international organization regarding definition and classification in mental retardation-intellectual disability (Reschly, 1992, 2013). The AAIDD has published a definition and classification manual since 1916. The most recent revision is the 11th edition of this venerable and vital resource concerning ID (AAIDD-11; Schalock et al., 2010). Other organizations such as the American Psychiatric Association's (APA) (2000) Diagnostic and Statistical Manual of the Mental Disorders (4th Edition, Text Revision), APA-DSM 5 (2013), follow the AAIDD-11, rather than lead, changes in ID criteria (Reschly, 1992, 2013; Reschly et al., 2002). I note also that the United States Supreme Court quoted the AAIDD Classification Manual in the decisions in *Atkins v. Virginia*, 536 U.S. 304 (2002), in *Hall v. Florida*, 134 S.Ct. 1986 (2014), and in *Moore v. Texas*, (2017) 137 S. Ct. 1039.
21. The AAIDD definitions, the APA-DSM IV-TR and DSM 5 definitions, and all existing ID definitions and classification criteria formulated in the last 50 years of which I am aware, establish a three-pronged diagnosis of ID; specifically, a) significant limitations in intellectual functioning, previously stated as significantly subaverage general intellectual functioning, b) adaptive behavior deficits associated with significant limitations in intellectual functioning, and c) origins in the developmental period, now typically defined as

before age 18 years in AAIDD. An age denoting the end of the developmental period does not appear in DSM 5 (2013).

22. The 2002 AAMR-AAIDD Classification Manual defined mental retardation as, "Mental retardation is a disability characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills." (Luckasson et al., 2002, p. 1).
23. The 2010 AAIDD 11th Ed. Classification Manual defined intellectual disability as, "characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills." (Schalock et al., 2010, p. 1).
24. Although the name changed from mental retardation to intellectual disability, the definition of the latter clearly is grounded in the prior definitions of mental retardation. The terms mental retardation and intellectual disability have equivalent meanings in the AAMR-AAIDD Classification Manuals over the last 50 years.
25. The dominance of the AAIDD in the determination of criteria for ID is clear from examining the official policies of professional and scientific organizations as well as educational and legal definitions of intellectual disability (Reschly et al., 2002). All state legal criteria I have reviewed use the 3-pronged criteria specified by AAIDD-11 and APA-DSM 5, often with less description of the components of, and criteria for, intellectual functioning and adaptive behavior (See also Duvall &Morris, 2006). Therefore, in determining and interpreting the criteria for ID where specification is absent in existing statutory definitions, the AAIDD descriptions and interpretations of its own criteria should prevail along with further guidance from the AAIDD User's Guides (Schalock et al., 2007, 2012).
26. In 2007 the committee that developed the AAIDD 10th Edition of the Classification Manual (Luckasson et al., 2002) produced the User's Guide: Mental Retardation Definition, Classification, and Systems of Support-10th Edition (Schalock et al., 2007). The purpose of the User's Guide was to, "… assist … in understanding the 2002 System fully and applying best practices based on that understanding."

27. In 2012 the User's Guide to AAIDD-11 was published. Understanding and application of the AAMR-AAIDD 10th and 11th editions of the Classification Manual require careful consideration of the User's Guides.
28. The Individuals with Disabilities Education Act (IDEA, 2004, 2006), at 34 C.F.R. 300.8 (2), defines intellectual disability as,

"Significantly subaverage general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period, that adversely affects a child's educational performance."

29. In 2010 Congress changed federal terminology from mental retardation to intellectual disability in what was called Rosa's Law (PL 111-256). In 2013 the American Psychiatric Association's DSM 5 discontinued the term mental retardation and adopted the term intellectual disability.

30. Information about Mr. Payne's intellectual functioning was also evaluated in the context of the Tennessee statute regarding Intellectual Disability (ID) determination, including its interpretation by the Tennessee Supreme Court *(Coleman v. Tennessee,* 2011). Tennessee specifies that,

> *"intellectual disability" means: (1) Significantly subaverage general intellectual functioning as evidenced by a functional intelligence quotient (I.Q.) of seventy (70) or below; (2) Deficits in adaptive behavior; and (3) The intellectual disability must have been manifested during the developmental period, or by eighteen (18) years of age.* (Tenn. Code Ann. Section 39- 13-203).

31. The parallels of the Tennessee statutory specification of ID to the APA DSM 5, AAIDD-11, and prior AAIDD definitions (Grossman, 1973, 1983; Luckasson et al., 1992; Schalock et al., 2010,) are obvious. The Tennessee Statute specifies the same dimensions (intellectual functioning and adaptive behavior), similar degrees of deficit on the intellectual prong of ID, and development origin in the form of ID presence by age 18.

Mild Intellectual Disability

32. Persons with Mild ID typically "pass" as normal in everyday situations, including many employment settings. Co-workers often *cannot* reliably identify persons with Mild ID unless job demands require the use of literacy skills (e. g., reading a shop manual), abstract reasoning, or complex problem solving. Persons with Mild ID typically do best with well-established routines that are not changed frequently and do not require complex thought or problem solving. Many persons with Mild ID are not recognized *formally* as a person with a disability in employment and community settings.

33. Mild ID has been recognized as a distinct diagnostic entity for over 100 years (Reschly, 1992, 2013). From the lay perspective, the adjective "mild" is misleading, perhaps suggesting a non-significant degree of impairment. In fact, persons with Mild ID have substantial and chronic problems with everyday coping due to limited thinking and understanding that contribute to adaptive behavior deficiencies (Snell & Luckasson, 2009). Mild ID involves significantly limited ability and competencies required for adequate coping with normal everyday environments. Most important, Mild ID limits the ability to reason abstractly and make sound judgments about everyday activities and responsibilities and, thereby, limits the capacity to consider likely consequences of behaviors and diminishes the capacity to behave in a socially responsible manner.

34. Mild ID is different qualitatively and quantitatively from both normal development and more severe levels of ID. Mild ID is a subset of ID; any individual with Mild ID meets the diagnostic criteria for ID as well. Although they meet the diagnostic criteria, individuals with Mild ID are often misdiagnosed and are, therefore, often overlooked due to misinformed societal perceptions of what it means to be intellectually disabled.

35. In addition, individuals with Mild ID often have developed a keen ability to mask their significant limitations, making proper recognition and diagnosis all the more challenging. The masking phenomenon is well known in the research on Mild ID and was described extensively in a monograph by Robert Edgerton, *The Cloak of Competence: Stigma in the Lives of the Mentally Retarded* and by other scholars. (Edgerton, 1967, 1993, 2001; Edgerton, Ballinger, & Herr, 1984; Goodman, 1989; Peltopuro, Ahonen, Kaartinen, Seppala, & Narhi, 2014; Snell & Luckasson, 2009). Some persons with Mild ID adopt an interaction

style of bragging about their capabilities and exaggerating their importance in an effort to "pass" as normal.

36. Mild ID is different from normal development in the level and quality of intellectual functioning and adaptive behavior performance. Persons with significant limitations in general intellectual functioning have a significantly reduced capacity to learn, recall, and reason (Campione, Brown, & Ferrara, 1982; Campione, Brown, Ferrara, & Bryant, 1985; Reschly, 1987, 2013; Snell & Luckasson, 2009). Such persons are particularly limited in applying abstract reasoning (e.g., moral or ethical principles) to practical situations and in spontaneously recalling thinking strategies to solve problems. These fundamental intellectual deficits affect everyday activities and responsibilities. Other learning deficits reported frequently with persons with low intellectual ability include difficulty in learning tasks even when taught repeatedly, applying basic learning to new situations, and severe limitations in literacy skills. As discussed above, adaptive behavior refers to competencies in dealing with the everyday responsibilities of children, youth, and adults in the conceptual, social, and practical domains.

37. Mild ID is different from severe levels of ID qualitatively and quantitatively. Severe levels of ID are more easily identified and, hence, more familiar to the general public. Persons with more severe levels of ID nearly always show,

    a. Significant physical signs of ID, that is, they look like they have a disability,

    b. Identifiable underlying biological disorders that can be said to "cause" the ID,

    c. Comprehensive deficits in all adaptive behavior domains (often including very basic self-help skills),

    d. Early identification, usually by age 2, nearly always by health care professionals, and

    e. Need for permanent, life-long daily guidance and protection.

38. In contrast to the characteristics of persons at severe levels of ID, persons with Mild ID,

    a. Do not show physical stigmata (they look normal) and cannot be identified as likely cases of ID from physical appearance;

b. Do not have identifiable biological disorders that can be regarded as "causes" of the ID, although many have evidence of developmental factors that diminish intellectual and adaptive performance such as premature birth, low birth weight, and exposure to toxic environments (Donovan & Cross, 2002, Chapter 5);

c. Have areas of strength and weaknesses in adaptive behaviors, e.g., adequate self-care (grooming, eating, toileting) and deficits in more complex reasoning and judgment that interfere significantly with personal independence and social responsibility;

d. Are typically identified (if at all) after age 5, following entrance to public school settings, through referrals by teachers due to chronically poor academic and social performance in the classroom;

e. Often are *misclassified* in school special education programs as Specific Learning Disability (SLD) and receive the "LD" label when in fact the consistency and level of their deficits are more consistent with mild ID (Gresham, MacMillan, & Bocian, 1996; MacMillan, Gresham, Siperstein, & Bocian, 1996);

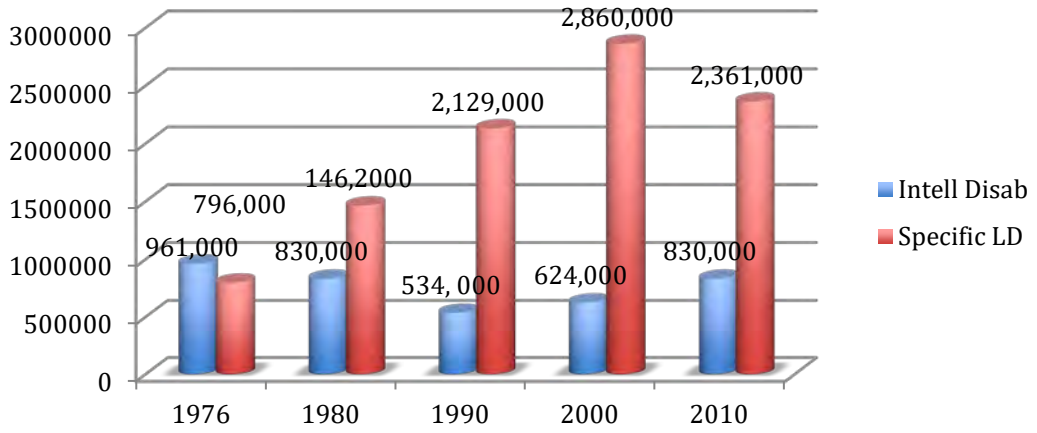
f. Need continuing, usually intermittent, guidance and protection in the community through the adult years in order to avoid exploitation and to cope adequately. The person(s) providing this guidance were identified as "benefactors" in the literature over the last 50 years (Baller, Charles, & Miller, 1967; Edgerton, 2001; Koegel & Edgerton, 1984; Snell & Luckasson, 2009).

39. These differences between Mild ID and severe ID underscore the range of abilities that persons who have ID can display. It is worth repeating that any individual with Mild ID is also a person with ID; the former designation is a subset of the latter.

40. The use of the diagnosis of Mild ID in public school settings with special education programs varied significantly in the latter half of the 20th century. In the 1950s most public schools had little if anything that would resemble modern special education. Few children were identified with disabilities and those with severe disabilities often were barred from public school enrollment by local and state policies. In the earlier period, larger cities in certain states had some, but, by today's standards, very limited special education services. The most common

service pattern was speech therapy provided on an itinerant basis in some schools that addressed almost exclusively articulation and fluency (stuttering) problems and special classes for students with what was then termed educable mental retardation. There were very few programs for students with more subtle disabilities such as specific learning disability and, rarely, emotional disturbance. Many students with what would now be recognized as disabilities either were not identified in school settings or excluded from public school participation. The most frequently diagnosed disability, and in most school districts, the only disability diagnosed in the public schools from 1950 to 1975, was Educable Mental Retardation (EMR), equivalent to the current term Mild Intellectual Disability. Unless there is specific information contradicting the inference of educable mental retardation, it can be assumed that students in 1950s special education programs were there under the diagnosis of EMR, or what now is called mild intellectual disability. Since 1975 the diagnosis of what was previously called EMR declined significantly for a variety of reasons (See Figure 1) (Reschly, 2013).

Figure 1 Number of Students Classified as ID and SLD Age 3-21 by Year in US



41. Mild ID often is associated with poverty and tends to run in families. Perhaps 80% of all persons with Mild ID have family members (parents, siblings, cousins, aunts, uncles) who are significantly impaired intellectually (Reschly, 2013; Richardson, 1981), a finding that is true across race/ethnicity. This form of Mild ID was attributed to cultural-familial or

psychosocial disadvantage origins in prior AAMR-AAIDD Classification Manuals (Grossman, 1973, 1983; Spitz, 2006) to signify the combined influences of the low family potential for intellectual functioning and the deleterious effects of impoverished environments. In order to avoid stereotypes it is essential to point out that the same cultural-familial and psychosocial disadvantage factors apply equally to children and adults of all races/ethnicities in impoverished environments (Richardson, 1981; Spitz, 2006). Mild ID is far higher in specific families in very low socioeconomic environments. Mr. Payne's familial poverty along with familial tendencies toward low intellectual performance and significant learning problems made him especially vulnerable to the development of mild intellectual disability (see later section on risk factors).

42. Persons with Mild ID as adults often can succeed in competitive employment, but nearly always in unskilled occupations that do not require advanced training/education, abstract thinking, and complex decision-making. Older research suggested that about 50% of persons with Mild ID could achieve competitive employment and economic self-support, frequently aided by someone who assists the individual with the more complex interactions with society, i.e., a benefactor. Siperstein and Collins (2015) reported that some persons with Mild ID can achieve gainful employment, participate in community leisure activities such as sports, attend religious services, drive cars, and develop and maintain long term relationships including marriage (See p. 27).

43. The self-support and community participation described above often are achieved through the presence of "benefactors," persons who provide periodic assistance with intellectually more complex challenges such as obtaining a job, completing complex paperwork such as that associated with applying for a job, income tax and social security forms, meeting community responsibilities, and handling money.

Diagnosis of Pervis Payne: Sources of Information

44. Multiple sources of information about Mr. Payne were considered in reaching a conclusion about Mr. Payne's status as a person with intellectual disability (ID). These sources were,

    a. Interview with Mr. Payne at River Bend State Penitentiary on June 6, 2010.
    b. Developmental history from interview with Mr. Payne and affidavits by persons listed below.
    c. Munford Tennessee school records, including test results in achievement, intellectual functioning, grades, teacher descriptions, and grade progression.
    d. Test Record Forms for the Wechsler Adult Intelligence Test-Revised, administered to Mr. Payne on October 10, 1987 and March 25, 1996, and a partial record of the Stanford-Binet Intelligence Scale on March 25, 1996.
    e. Wide Range Achievement Test-Revised, partial record form, 1995 or 1996.
    f. Declaration by Martha Fayne, Munford High School teacher and counselor, August 10, 2017.
    g. Affidavit of Denise Wakefield Giles, Neighbor of the Payne family in same school class as Mr. Payne, September 24, 2017.
    h. Affidavit of Zac Hayslett, teen-age friend of Mr. Payne and currently Minister of Music for the Greater Community Temple in Memphis, August 13, 2017.
    i. Statement and Affidavit by Rolanda Holman, sister to Mr. Payne, January 6, 2012.
    j. Affidavit of Rolanda Holman, sister to Mr. Payne, September 23, 2017.
    k. Declaration by Warren Monego, employer of Mr. Payne from 1985-1988, July 28, 2010.
    l. Joseph Parker, Munford High School Science and Math teacher, taught Mr. Payne in a 9^{th} grade arithmetic class, August 10, 2017.
    m. Affidavit of Mary Ella Payne, Munford Drummond Elementary School teacher who taught Mr. Payne is a reading resource class, May 5, 2017.

n. Declaration by Tyrasha Payne, younger sister of Mr. Payne, August 18, 2010.

o. Affidavit of John William Scott, Head Master at Tipton Rosemark Academy, Principal at Munford High School in 1983-1984, May 5, 2017.

p. Affidavit of Everlina Sloan, Tipton County School District, taught Social Studies classes to Mr. Payne when he was in 6th, 7th, and 8th grades, May 8th, 2017.

q. Statement of Andre Thomas, neighbor and classmate of Mr. Payne, no date.

r. Affidavit of Sidney Thomas, lifelong associate of Mr. Payne who observed him in church and in other settings, May 7, 2017.

s. Affidavit of Damon Wherry, classmate of Pervis Payne in elementary, middle, and high school, July 16, 2017.

t. Affidavit of Mary Williams, 9th grade English teacher, June 28, 2017.

u. Affidavit of Carl Payne, Mr. Payne's father, July 16, 2017.

v. Affidavit of Vera Wherry, neighbor of Mr. Payne, July 16, 2017.

w. Affidavit of Lovie Pryor, Mr. Payne's teacher in special math program, July 15, 2017.

x. Affidavit of Darren McGraw, cousin to Mr. Payne, July 17, 2017.

y. Affidavit of Irene Thomas, neighbor of Mr. Payne, July 18, 2017.

z. Affidavit of Glenda Calhoun, 7th grade teacher, July 16, 2017.

aa. Affidavit of Ruth Wakefield Johnson, friend of Mr. Payne, July 15, 2017.

bb. Review of the trial transcript, February 1998 trial, volumes 4 through 11.

Intellectual Assessment Standards and Criteria

45. AAIDD11 defines significant limitations in intellectual functioning for a diagnosis of intellectual disability as,

"An IQ score that is *approximately* two standard deviations below the mean, considering the standard error of measurement for the specific instruments used and the instrument's strengths and weaknesses. Practically, this results in an intellectual functioning criterion as a

score range from approximately IQ 65 to IQ 75, assuming a standard error of measurement of 5." (Schalock et al., 2010 p. 31).

46. The standard error of measurement on the best recently standardized tests of intellectual functioning have internal consistency reliabilities of about 0.95 and stability reliabilities of about 0.91. Use of the classic formula these reliabilities produce a standard error of measurement of about 5 (depending on the reliability estimate used and whether a 90% or 95% confidence interval is established).
47. The AAIDD Classification Manual views the IQ cut off as flexible around an IQ score of approximately 70. In other words, according to the AAIDD, assuming intellectual functioning tests with a mean of 100 and standard deviation of 15, IQ scores above 70, up to 75 (given a standard error of measurement [SEM] of 5 points), can be considered indicative of significant limitations in intellectual functioning and meet the first prong of the ID diagnosis.
48. The AAIDD was explicit in instructing clinicians and others to see the general intellectual functioning criterion as a range of scores, not as a simple precise, immutable score. Specifically, the *User's Guide* states,

"An IQ of 70 is most accurately understood not as a precise score, but as a range of confidence with parameters of at least 1 standard error of measurement (i.e., scores of about 66-74; 66% probability) or parameters of two standard errors of measurement." (i. e., scores of 62-78; 95% probability)." (Schalock et al., 2007, p. 12).

49. In APA-DSM V (2013) the intellectual criterion is described as,

"Individuals with intellectual disability have scores of approximately two standard deviations or more below the population mean, including a margin for measurement error (generally +/- 5 points). On tests with a standard deviation of 15 and a mean of 100, this involves a score of 65-75 (70 +/- 5)."

50. Understanding and application of what has been called the Flynn Effect (1984, 1998, 2012), named after the New Zealand scholar who first described the phenomenon of intellectual functioning norms becoming less stringent over time, is recommended in the AAIDD *User's Guides* (Schalock et al., 2007, 2012) and mentioned in DSM 5. First, the Flynn Effect means that the normative standards (norms) for measures of intelligence become less stringent over time at the rate of approximately 0.3 points per year. For example, if the norms for an

intelligence test are 10 years old, the population mean on the test no longer is 100, but 103 [100 + (0.3)(10)]. Moreover, the point that is two standard deviations below the mean no longer is 70, but 73 (assuming a mean of 100 and standard deviation of 15). A simple correction for normative standards obsolescence is to multiply the number of years since the test was standardized by 0.3, then subtracting the resulting number from the obtained IQ scale scores (Full-Scale and part scales such as Verbal and Non-Verbal).

51. The AAIDD *User's Guide* (2007) was explicit about the consideration of the Flynn Effect, "In cases where a test with aging norms is used, a correction for the age of the norms is warranted." (p. 20). The *User's Guide* then applies the Flynn correction of 0.3 points per year to a set of test scores. The *User's Guide* concluded, "Thus the clinician needs to use the most current version of an individually administered test of intelligence and take into consideration the Flynn Effect as well as the standard error of measurement when estimating an individual's true IQ score." (p. 21). A virtually identical statement about correction for obsolete norms appears in the 2012 *Users Guide* (Schalock, 2012, p. 23).
52. The Technical Manual for the Wechsler Adult Intelligence Scale 3rd Edition (WAIS-III) (Wechsler, 1997) contained this treatment of the Flynn Effect.

"Updating of Norms. Because there is a real phenomenon of IQ-score inflation over time, norms for a test of intellectual functioning should be updated regularly (Flynn, 1984, 1988; Matarazzo, 1972). Data suggest that an examinee's IQ score will generally be higher when outdated rather than current norms are used. The inflation rate of IQ scores is about 0.3 points each year. Therefore, if the mean IQ of the U.S. population on the WAIS-R was 100 in 1981, the inflation might cause it to be about 105 in 1997." (pp. 8-9).

53. The most recent Wechsler Adult Intelligence Scale IV (WAIS; Wechsler, 2008a) Technical Manual recognizes the reality of the obsolescence of normative standards with the passage of years as follows,
54. "Research also suggests that older norms produce inflated scores on intelligence measures (Flynn, 1984, 1998, 2012; Flynn & Weiss, 2007; Matarazzo, 1972). Test scores should be based on normative information that is both contemporary and representative of the relevant population. (Wechsler 2008b, WAIS-IV Technical Manual, p. 22).

55. Later in the WAIS 2008 Technical Manual direct comparison of the WAIS IV and WAIS III scores for persons with low ability were reported (See WAIS-IV Technical Manual, p. 78-79, Tables 5.7 and 5.8). The predicted Flynn Effect across the two studies was at the 0.3 per year level, WAIS III higher than WAIS IV, based on 11 years between the publication of the WAIS IV (2008a) and the publication of the WAIS III (1997). Based on the evidence in the WAIS IV Technical Manual and other research, correction of the obsolescence of norms using the 0.3 per year is fully justified.
56. James Weiss, Vice-President of Global Research and Development at Pearson, the publisher of the Wechsler Scales, concluded in 2010,
    a. Dr. Flynn is to be commended for a meaningful life's work.
    b. The Flynn Effect (FE) is real.
    c. The FE has been shown to be near 3 points per decade on average over a large number of studies, countries, and tests.
57. The Flynn Effect is a scientific fact. Two recent comprehensive meta-analyses based on hundreds of empirical articles were published in high quality journals with identical results (Pietschnig & Voracek, 2015; Trahan, Stuebing, Fletcher, & Hiscock, 2014). The research foundation for the Flynn Effect is definitive and establishes strong support to correct IQ scores for the obsolescence of norms using the 0.3 points per year algorithm.
58. Increasingly test authors and experts in intellectual assessment are recognizing the reality of the Flynn Effect (e. g., Gresham & Reschly, 2011; Kaufman, 2010a, b; Reschly & Grimes, 2002; Reynolds, Niland, Wright, & Rosenn, 2015; Weiss, 2010) including recommendations to adjust scores related to high stakes decisions about individuals (Kaufman, 2010b). In 2002 Reschly and Grimes asserted, "The now well-known Flynn Effect must be considered to avoid undue effects of out-of-date norms. The newest revision and most recent norms for a test should be used. (Reschly & Grimes, 2002, p. 1347).
59. Practice effects must be considered when a higher score is reported on the same or highly similar test administered to the same individual at a subsequent time. Scores usually increase if the same, or highly similar instrument is administered to the same individual. A recent review of practice effects indicates that they are larger than typically understood and can persist over many years (Calamia, Markon, & Tranel, 2012). Best practice is to administer a

different highly regarded and sound instrument or to accept the original score unless there are compelling reasons not to do so.

60. Intellectual assessment must be conducted by appropriately educated and credentialed professionals, in accordance with the standardization procedures established when the test was normed with a representative sample of persons in the US across the ages included on the test. Intellectual assessments used to determine significant limitations in intellectual functioning as part of the ID diagnosis should be individually administered measures that require performance across broad factors of intelligence and yield a full-scale or composite score. Tests administered to *groups* of examinees are not acceptable nor are *short* forms of more thorough assessment instruments (Reschly et al., 2002; Schalock et al., 2010).
61. Performance across intellectual and achievement tests varies *within* most normal individuals and individuals with Mild ID. The expectation of flat profiles, that is, little variation across subtests and domains, is *not* supported by evidence (Bergeron & Floyd, 2013). Therefore, interpretation of the performance of persons who may be ID *cannot* cite occasional strengths as inconsistent with the ID diagnosis (Schalock et al., 2010). According to the AAIDD 11th ed. classification manual (Schalock, 2010, p. 34) "it is the position of the AAIDD that intellectual functioning (as defined at the beginning of this chapter) is best conceptualized and captured by the general factor of intelligence (g)." The Full-Scale IQ or composite score on modern measures of intelligence are good measures of the general factor of intelligence (Floyd, Reynolds, Farmer, & Kranzler, 2013).

Significantly Subaverage Intellectual Functioning

62. Information about Mr. Payne's intellectual functioning was then evaluated in the context of the Tennessee statute regarding intellectual disability (ID) and the national authoritative standards of AAIDD-11 (2010) and the American Psychiatric Association Diagnostic and Statistical Manual of the Mental Disorders (DSM-5; 2013).

63. One intellectual functioning score was entered in Mr. Payne's school records. The Otis-Lennon Test of Mental Ability was administered to Mr. Payne on March 4, 1976 when he was 9 years old. The Otis-Lennon is a well-respected *group* ability or IQ test that continues to be used today. On this IQ test, Mr. Payne obtained an IQ score of 69. This score was consistent with his learning of basic academic skills such as reading, writing, and

mathematics (see discussion of the Conceptual Domain of Adaptive Behavior), and strongly suggests the existence of Mild ID during the developmental period. Scores on *group*-administered measures of general intellectual functioning are not acceptable as the primary and certainly not the sole measure of the intelligence criterion for Intelligence (AAIDD-11; APA DSM-5).

64. The Wechsler Adult Intelligence Test (WAIS) was administered to Mr. Payne three times over the past 25 years. The Wechsler Adult Intelligence Scale-Revised (WAIS-R) was administered in 1987 and 1996. The WAIS-R was published in 1981, using normative data gathered in 1978 (Wechsler, 1981). The third administration in 2010 used the recently developed Wechsler Adult Intelligence Scale-4th addition (WAIS-IV) (Wechsler, 2008) and the normative data gathered in 2007. The WAIS version and publication dates are vitally important to the interpretation of results for Mr. Payne because of the well-known Flynn Effect described previously. The normative statistics for the WAIS-Revised (WAIS-R) administered to Mr. Payne in 1987 were, at that time, 9 years out of date. The population mean at that time was 100+(.3)(9)=102.7. The WAIS-R score that is two standard deviations below the mean is 72..7, not 70. The Verbal IQ, Performance IQ, and Full Scale IQ have to be adjusted for the Flynn Effect, that is, the obsolesce of the norms. In Table 1 these adjustments are made to the WAIS-R scores in 1987.

65. The same WAIS-R was administered to Mr. Payne in 1996 when the normative standards were 18 years out of date (1996-1978= 18). The population mean on the WAIS-R no longer was 100 as it was when the normative standards were established in 1979, but had changed to 105.4 (100+(.3)(18)=105.4. An IQ score that was two standard deviations below the population mean in 1996 was 75.4, not 70. The Verbal, Performance, and Full Scale IQs were adjusted in Table 1 to account for the obsolete WAIS-R nonnative standards in 1996. A one-point adjustment was made to the WAIS-IV results obtained in 2010 when the normative standards were only 3 years out of date.

66. The WAIS versions administered to Mr. Payne over the past 25 years yielded largely consistent results if the appropriate adjustments are made for the age of the normative standards when the test was administered. In all cases the Full-Scale IQ scores were at or below the score of 75 when appropriate adjustments are made for the age of the normative standards. The Full

Scale scores varied only from 72.6 in 1996 to 75.3 in 1987. On the most recent Wechsler test, Mr. Payne obtained a WAIS-IV (Wechsler, 2008) Flynn-corrected score of 74. This score is within the range of IQ=65 to 75 endorsed by the AAIDD-11 and DSM 5 (2013).

67. Mr. Payne's Flynn-corrected Verbal and Performance IQ scores did not vary significantly over the three administrations of the WAIS. In all cases, the scores were within approximately one standard error of measurement (SEm=5), suggesting no changes in his mental abilities over the past 25 years. It is clear that Mr. Payne has been operating in the very low range of ability, **and** within the widely accepted standard for the identification of mental retardation of an IQ at or below 75. Mr. Payne meets the AAIDD-11 and the DSM-5 criteria for significant limitations in intellectual functioning.

Table 1. Summary of Mr. Payne's Wechsler Adult Intelligence Test Performance from 1987- 2010.

DateTest/ Score	Verbal	Verbal/VCI Corrected	P-IQ	Perf/PRI	Full Scale	Full Scale Corrected
1987/WAIS-R Norms 1978	78	75.3	82	79.3	78	75.3
1996/WAIS-R Norms 1978	78	72.2	85	79.6	78	72.6
2010/WAIS 4 Norms 2007	81	80	77	76	74	73

Note: Corrected scores are used to account for the obsolescence of the norms when the tests were administered to Mr. Payne.

68. Results of IQ tests should not be applied rigidly to the determination of ID without consideration of other sources of information. Low intellectual functioning on formal tests usually is accompanied by deficits in everyday functioning (Gottfredson, 1997). Numerous persons who observed Mr. Payne in his childhood, adolescent, and early adult years reported that he was slow and unable to do many things that his siblings and peers could do (Carl Payne, Mary Ella Payne). According to his parents he needed multiple explanations to do things his siblings learned easily. Several teachers remembered him as slow to learn basic skills and significantly behind other

children his age (Ms. Fayne, Mr. Parker, Ms. Mary Payne, Mr. Scott, Ms. Sloan). Siblings recalled that he was slow and had trouble learning practical things around the household, especially in learning how to cook and remembering parental instructions (Ms. Tyrasha Payne, Ms. Holman). Friends and classmates recalled that he was a slow learner who did not comprehend processes and events that other his age could master (Ms. Giles, Mr. Hayslett, Mr. Andre Thomas, Mr. Sidney Thomas, and Mr. Wherry). Neighbor Irene Thomas and Carl Wakefield observed that Mr. Paync was developmentally slow, acquiring skills as a young child such as walking, talking, and feeding oneself more slowly than normal children. Ruth Wakefield Johnson recalled that Mr. Payne gave her the impression of "blankness," and that he could not think for himself. The low intellectual performance also affected his work success according to Mr. Monego who observed that he was mentally challenged and could not learn to do job tasks like other employees. Ms. Lovie Pryor who taught Title I math to Mr. Payne noted that his family was well-known in the community and that she throught teachers had sympathy for him and "cut his some slack." Mr. Payne's low intellectual functioning on tests was also manifested across settings, apparent to teachers, siblings, and classmates.

69. It is my expert opinion that Mr. Payne's functional intelligence clearly is at or below IQ=70-75 and otherwise in the range of ID according to the criteria established in AAIDD-11, APA DSM-5, and the Tennessee ID statute. This conclusion is further supported by the significant limitations in adaptive behavior described below.

Significant Deficits in Adaptive Behavior

70. The AAIDD-11 Classification Manuals described the adaptive behavior prong as, "significant limitations in adaptive behavior as expressed in conceptual, social, and practical adaptive skills." (Luckasson et al., 2002; Schalock et al., 2010).

71. Adaptive behavior was defined AAIDD-11 by three domains of functioning: Practical, Social, and Conceptual. The definitions of each domain appear in Schalock et al., (2010, p. 44) as,

> Conceptual skills: language; reading and writing; and money, time, and number concepts.
>
> Social skills: interpersonal skills, social responsibility, self-esteem, gullibility, naiveté (i.e., wariness), follows rules/obeys laws, avoids being victimized, and social problem solving.
>
> Practical: activities of daily living (personal care), occupational skills, use of money, safety, health care, travel/transportation, schedules/routines, and use of the telephone.

72. The APA DSM-5 followed AAIDD-11 in defining three domains of adaptive behavior, conceptual, social, and practical. The APA DSM V definition was, "Deficits in adaptive functioning refer to how well a person meets community standards of personal independence and social responsibility, in comparison to others of similar age and sociocultural background. Adaptive functioning involves adaptive *reasoning* in three domains: conceptual, social, and practical. " (p. 37). The descriptions of competencies within the adaptive behavior domains were parallel to the AAIDD descriptions (see paragraph 31). APA DSM 5, like AAIDD-11, specifies that significant impairment in one of the three domains is sufficient to meet the adaptive functioning criterion. APA DSM 5 does not, however, suggest a numerical cut score or range for defining a significant limitation in adaptive behavior.

73. It is critical to understand -- as the AAIDD-11 explicitly warns -- "Within an individual, limitations often coexist with strengths." (Luckasson et al., 2002; Schalock et al., 2010, at p.1). Therefore, it should not be expected that persons with mild ID would be deficient in *all* aspects of adaptive behavior. The AAMR suggests that a significant limitation in *one* of the three domains of adaptive behavior is sufficient for the diagnosis of mental retardation,

assuming significant limitations in general intellectual functioning. APA-DSM V adopted the same criterion, that is, deficits in one of three adaptive behavior domains.

74. Tennessee ID Statute does not describe adaptive behavior domains, criteria to determine a deficit, or methods of assessment. Authoritative sources on adaptive behavior suggest specific domains of adaptive behavior (see below), use of multiple methods of data collection (review records, interviews, observe behavior, and test directly), and multiple sources of information (e. g., individual being evaluated, others who know the individual, etc.) (Luckasson et al., 1992, 2002; Reschly et al., 2002; Schalock et al., 2010).

75. The analysis of Mr. Payne's adaptive behavior status is done using the three domains of adaptive behavior specified in the APA DSM 5 (2013) and AAIDD-11 (2010), Conceptual, Social, and Practical.

Conceptual Skills Domain:

76. The conceptual skills domain of adaptive behavior is defined in AAIDD-11 as "language; reading and writing; and money, time, and number concepts." Literacy skills clearly are important. Indeed, inadequate literacy skills establish an enormous barrier to adequate adjustment in the adult years. Moreover, poor and failing school performance prior to age 18 is a significant indicator of significant limitations in the conceptual skills domain during the developmental period. Continuing, life-long deficits in the conceptual domain usually follow very poor school performance in literacy skills. Functional intelligence typically is revealed in several adaptive behavior domains, particularly the conceptual skills domain.

77. <u>Educational Performance.</u> Mr. Payne's school transcript reflected the performance of a student who had significant difficulty learning basic literacy skills such as reading, spelling, writing, and numeracy. The course grades and percent correct scores on his transcript show a preponderance of low marks, Ds and Fs, as well as what appear to be percentage correct scores in the 60s and 70s. Poor grades were apparent beginning in the early grades and continuing through high school.

78. The pattern of poor achievement was apparent as well in Mr. Payne's performance on standardized achievement tests administered annually by the Munford Public Schools. Mr. Payne was well below current grade placement throughout his public school career. For

example, he was performing at the third grade level at the age of 12 when he should have been at the 7th grade level.

79. Further evidence of chronic achievement deficits comes from him failing the 7th grade and being retained. Grade retention is a serious indicator of inadequate school performance and further indicative of significant deficits in conceptual skills.
80. In high school Mr. Payne obtained low grades and was in a lower track curriculum according to his teachers (see affidavits by Ms. Fayne and Mr. Parker). For example, Mr. Payne was enrolled in arithmetic in 9th grade rather than the standard algebra course, indicating that mathematics skills well below the age and grade level expectations. Although Mr. Payne did pass the Tennessee Mathematics Proficiency Test, much to the astonishment of Mr. Parker, he was unable to pass the Language Arts Proficiency Test despite four attempts to do so. The fact that Mr. Payne persisted through high school, attempting to pass the proficiency tests, indicates that he was not a particularly socially disruptive student, as many very low achievers are, and that he was trying to succeed. His efforts were unsuccessful due to low functional intelligence, that is, despite trying hard he simply could not master the simple (reading) and complex (vocabulary, concepts) skills required on the Tennessee Language Proficiency Test. Mr. Payne did not earn a high school diploma and has not completed a Graduation Equivalence Diploma. . In order to learn the arithmetic that his peers learned and mastered several years earlier, Mr. Parker reported that Mr. Payne needed lots of individualized attention and explicit instruction.
81. An affidavit by Ms. Martha Fayne, high school science teacher at Munford High School who had Mr. Payne as a student, essentially confirms the poor acquisition of skills and very low achievement in the school records. Ms. Fayne describes Mr. Payne as not being able to read the textbook and not comprehending what was read. She recalled that, “even when the material was explained to him, he had to be told over and over what to do. He couldn’t retain instructions or information from one day to the next.” Later in her affidavit, Ms. Fayne states that she believes Mr. Payne had a significant level of intellectual disability and that he should have been in special education. She suggests that if he was not in special education, it may have been due to a decision by his parents to refuse disability identification and special education placement.

82. Tyrasha Payne, Mr. Payne's sister, recalled that their mother spent a lot of time meeting with teachers to enable him to pass classes. The need for a significant amount of parental intercession with teachers is further indication of Mr. Payne's intellectual limitations that in turn impeded his progress in acquiring important, practical academic skills.
83. Classmates described his slow learning and his low achievement despite receiving lots of help with his homework. Sometimes classmates did his work for him because it was beyond his intellectual ability (Ms. Giles, Mr. Andre Thomas) and they observed that he was several grades behind the class in basic skills.
84. Mr. Payne's participation in special education is not confirmed by school records. Two teachers, however, Ms. Calhoun, 7th grade teacher, recalled that Mr. Payne "went out for resource reading." She further recalled that, "When a child was having problems they would be referred to resource and then tested before being placed in the resource class." A second teacher, Ms. Williams who taught 9th grade English, recalled that Mr Payne received his English grade through the resource class.
85. The term "resource" is commonly used by educators to denote a special education placement that is called in most states, Resource Teaching Program. It is a special education program. Unfortunately, the available education records do not contain information on whether Mr. Payne was referred, evaluated, diagnosed with an educational disability, and placed in special education. The absence of special education records in school files is not unusual because such records typically are destroyed from 3 to 5 years after the student had left the school.
86. Language, Reading, and Writing. Mr. Payne had well documented deficits in the use of language and related academic skills such as reading and writing. He was administered standardized achievement tests at nearly every grade while attending public school in Munford, TN. These problems emerged early in his school career and persisted to adulthood. In first grade he obtained what appeared to be a score of 65 on the Gates MacGinitie reading test (with an average of 100 and a standard deviation of 15). By the 4th grade he was two full years behind in most academic areas including reading and spelling. At the age of 12 when he should have been in the 7th grade, it appeared from the school transcript that he had a grade level score of 3.0, indicating that he was falling farther behind as he grew older. In his trial he was asked to read the name of a product from the label (Geritol High Potency). He

was unable to identify the word “potency” indicating that his poor reading persisted into his adult years with obvious practical consequences.

87. Mr. Payne was never able to pass the Tennessee Language Proficiency Test (reading, writing, spelling, vocabulary) despite taking it 4 and, perhaps, 5 times. Grades in language related subjects were poor throughout his school career, often Ds and Fs in subjects like English.

88. Money, Time, and Number Concepts. Relatively little evidence exists regarding Mr. Payne’s mastery of basic money, time, and number concepts. School records suggest that he had significant difficulty with the kinds of abstract thinking associated with competent performance regarding money, temporal relationships, and numerical relationships. He apparently did have a savings account at a local bank based on his trial testimony. In his testimony about purchases made the day of the crime, however, he appeared to have little information on how much he paid for various items that day, including two purchases (beer and Geritol) and was confused about the amount of money he withdrew on the day of the crime, purchases he made, and the approximate remaining balance he had left in his account. It is clear, based on this evidence as well as his overall problems with conceptual reasoning that he very likely had significant problems with money, time, and numerical relationships.

89. Summary Conceptual Skills Domain. Multiple sources of evidence confirm the existence of significant limitations in Mr. Payne’s conceptual skills. These deficits arise from the significant limitations in functional intelligence and are expressed as substantial deficits in language concepts, literacy skills, and in concepts of money, time, and numeracy. Based on Mr. Payne’s deficits in the conceptual skills domain, he meets the AAIDD-11 and DSM-5 criteria on the adaptive behavior prong of the ID diagnosis.

Social Skills Domain:

90. The AAMR/AAIDD Classification Manuals identify social skills as a second critical adaptive behavior domain (Luckasson et al., 2002; Schalock et al., 2010). The Social Skills Domain is organized into the sub-domains of interpersonal skills, self-esteem, social responsibility, gullibility-naiveté, follows rules/obeys laws, and social problem solving.

91. Interpersonal Skills. Mr Payne had trouble understanding conversations and could not keep up with his peers in the normal give and take of child and adolescent conversations (Ms.

Holman). His mother shopped for his clothes as a teen-ager and laid out his clothes in the morning when he was in high school, assistance that nearly all teens do not need and often reject (Ms. Tyrasha Payne). Mr. Payne stuttered as a child (Ms. Sloan, Mr. Sidney Thomas), particularly when nervous or under pressure to answer a question promptly. The stuttering caused some teasing that inevitably diminishes interpersonal skills (Wherry). Mr. Payne often could not understand the games played by his peers. Mr. Andre Thomas described his ignorance of basketball rules even though he tried to play with peers. Ignorance of this kind nearly always leads to social approbation by peers. Although no one said this explicitly, he undoubtedly was perceived by peers as "dumb," an unfortunate description by teens of persons who meet the criteria for Mild ID. Mr. McGraw noted that he recalled that Mr. Payne would try to hide his deficits through such ruses as saying he could not see due to insufficient light or he needed glasses to hide his reading deficits. The efforts to hide deficits generally were unsuccessful according to Mr. McGraw.

92. Self-esteem. As a slow learner and low achiever, Mr. Payne did not enjoy the esteem building success with learning basic skills such as reading and arithmetic. He was far behind peers and recognized broadly as a slow learner who struggled with basic tasks at school and at home. He was slow at work in a pizza business according to the owner of the business, a fact undoubtedly known by other workers. In adolescence he was unable to understand and play the games that his peers enjoyed (e. g., Andre Thomas).
93. Gullibility-naiveté. Mr. Sidney Thomas described Mr. Payne as a person who could be easily tricked and exploited by others. He gave an example of Mr. Payne being responsible for transporting people to his father's church. Some riders would convince him to do other errands rather than go to the church directly, making them late to the services. His father, Pastor Carl Payne, was quite unhappy when this happened. As Mr. Thomas put it, "It seems that Pervis was not able to think through a situation and see what the consequences would be." This is a classic description of the intellectual and social limitations that are typical of persons with Mild ID that were mentioned specifically in *Atkins v. Virginia* (2002). His father, Carl Payne, also noted that Mr. Payne could be tricked and fooled by others more easily than other children and adults his age. Vera Wherry also noted that people often took advantage of Mr. Payne in ways that he did not understand.

94. Follows Rules/Obeys Laws and Social Responsibility Mr. Payne was not a chronically disruptive student in school according to his teachers. He tried hard and followed school and classroom rules. As one teacher recalled, "I remember Pervis Payne as a pleasant, nice person who was never a disciplinary problem." (Ms. Fayne). According to Mr. Payne, he was not charged with any legal violations until the alleged murder for which is now incarcerated. He did admit, however, to using illegal drugs (see later discussion of health and safety). Overall, Mr. Payne was socially responsible for the most part except for the very serious crime that is at issue in this proceeding.
95. Social Problem Solving. The essence of social problem solving is consideration of alternative behaviors and weighing the consequences of each, then selecting a behavior that is appropriate to achieve goals. Most social problem solving involves language and thinking competencies that are used to consider the demands of a particular context, the rights and needs of other persons, and alternative solutions. Mr. Payne did not have the intellectual competences to make the complex social judgments required for effective social problem solving. Mr. Payne was exploited by other persons in situations that he did not understand or carefully analyze the consequences of alternative behaviors.
96. The AAIDD-11 Classification Manual and DSM 5 identify social skills as a second critical adaptive behavior domain (Luckasson et al., 2002; Schalock et al., 2010). The Social Skills Domain is organized into the sub-domains of interpersonal skills, self- esteem, social responsibility, gullibility, naiveté, follows rules/obeys laws, and social problem solving. The available evidence from school records and affidavits by Mr. Parker, Ms. Fayne, and his sisters suggest that Mr. Payne's performance in this domain may have been adequate in some subdomains of social skills, along with significant limitations in other subdomains.

Practical Skills Domain

97. The Practical Skills Domain contains several sub-domains that vary significantly in complexity, from simple daily care activities such as toileting and dressing to more complex skills in use of money. Mr. Payne's performance as a child and young adult varied significantly across the subdomains of the practical skills domain.

98. Activities of daily living (personal care). Mr. Payne's sister, Tyrasha Payne, recalled that he was not able to make choices appropriate to his age about the purchase and selection of clothes even when he was a teen-ager. By the teens, the vast majority of youth of both genders take responsibility for decisions about purchasing clothes and selection of outfits to wear to school. Mr. Payne was still dependent on his mother at a much older age than normal. Ms. Payne also recalled her mother telling her that Mr. Payne was born prematurely and that he developed slowly physically in the early years.

99. A second sister, Rolonda Holman, recalls that Mr. Payne could not prepare meals competently even though he tried to do so and had good role models and explicit instruction from his mother. She recalls specifically that Mr. Payne attempted several times to make fried chicken, but failed each time despite good instructions from others. Although 7 years older than Ms. Holman, Mr. Payne could not help her with her homework, a further indicator of both poor conceptual and practical skills.

100. Occupational skills. Mr. Payne's occupational skills and work history are consistent with the diagnosis of intellectual disability (ID). He has a very limited employment record showing two jobs, one at a manufacturing facility and another at a restaurant. The manufacturing job lasted only a brief time and little is known about his performance or why he left the job. The restaurant employment was at Pizza Hut in the mid to late 1980s. According to the sworn affidavit of his supervisor, Mr. Warren Monego, Mr. Payne was mentally challenged and much slower mentally than the other employees. Mr. Payne could not be trained like other employees by watching how other employees performed their jobs, but rather, required multiple demonstrations and explicit instructions. Even with far more time spent training than required by other employees, Mr. Monego reported that Mr. Payne had to be reminded frequently to look at the instructions. Interestingly, Mr. Monego described Mr. Payne as "forever trying to hide the fact that he was mentally challenged." This is a common observation of persons with intellectual disability described for several decades in the literature as the struggle to pass as normal (Edgerton, 1973, 1993). Like many other persons with intellectual disability, Mr. Payne's struggle to pass as normal had just the opposite effect of making the intellectual limitations even more noticeable.

101. Mr. Payne was employed by his father in a painting business at the time of the crime in 1987. From my interview with him, it was clear that he was an unskilled laborer in this employment and that his father handled all the complex matters involved with obtaining contracts, estimating costs, purchasing supplies, organizing the work, and billing (confirmed by Carl Payne, his father). Specifically, Mr. Payne disclosed that he could not determine the square footage on a job and therefore could not do a job estimate of the overall costs, order materials, or determine during the job whether the available supplies were sufficient. The employment with his father is an example of the "benefactor" process of someone more capable guiding a person with ID, assisting or performing more complex tasks, and supporting the person socially and mentally.

102. Use of money. Mr. Payne was partly self-supporting as a young adult. He still lived at home, but appeared to handle his finances with relatively little assistance. He had a savings account at a local bank. He did not have any credit cards and operated on a cash basis. As noted previously others described that he seemed to be uninformed about the approximate costs of items he apparently purchased frequently and was easily confused about amounts spent on simple purchases.

103. Safety and health care. There was little evidence regarding Mr. Payne's competence with safety issues and health care. Again, however, his markedly limited literacy skills and conceptual understanding almost certainly interfered with competent decision-making regarding safety and health care issues. It is highly doubtful, for example, that he could read and follow the directions on a prescription. Andre Thomas described Pervis Payne's poor judgment as a child and adolescent about potential dangerous activities. He was described as jumping into ditches with enough water that objects on the ground or in the water could not be seen. He recalled that Mr. Payne once cut his hand/wrist during one episode and suggested that this incident was an example of the Mr. Payne's poor judgment. Mr. Payne admitted to using drugs, but could not describe the kind, amount, and pattern of drug use.

104. Travel and transportation. Mr. Payne did drive an automobile, apparently using a vehicle owned by his father. He also mentioned misplacing a wallet in his testimony and needing to have his driver's license in order to drive an automobile owned by another person. He seems, therefore, to have possessed the basic skills associated with travel and transportation. He described having a driver's license in testimony, but a search of Tennessee records did not confirm that he did, in fact, have the driver's license. In my interview with him, he was unable to find states on a US map and could find Memphis, but not Nashville or Knoxville on a Tennessee state map. It is likely that his travel was restricted to familiar areas.

105. Schedules/Routines. Mr. Payne in his testimony and in my interview with him seemed to be aware of schedules and routines. He could, for example, describe the meal times at the prison and other events during the day. This information does not, however, indicate much about whether he could independently conform to a schedule on an everyday basis and establish a constructive routine for work, sleep, and recreation.

106. Use of the telephone. Although there was little evidence on this matter, it did appear that Mr. Payne could use a phone. There is no evidence that he could look up a number using the alphabetic principle and it is unlikely that he could do so due to his significant deficits in reading.

107. Summary of the Practical Skills Domain. Mr. Payne clearly had deficits in the practical skills domain, particularly in occupational skills. The affidavit from Mr. Monego was unequivocal. Mr. Payne had great difficulty learning, remembering, and executing very basic steps in the preparation of pizza. The deficits described by Mr. Monego are classic examples of the kind of practical skills limitations that arise from significant deficits in functional intelligence. Intellectual Disability (ID) is fundamentally a disorder of learning, remembering, and thinking, deficits that affect nearly every aspect of life. Evidence on other competencies in this domain was sparse and equivocal. Clearly, he could not perform basic tasks of selecting clothes even as a teen-ager and never mastered simple cooking skills. Based on the occupational skills deficits and the self-care

problems, Mr. Payne overall has significant limitations in the Practical Skills Domain of adaptive behavior

Adaptive Behavior Summary.

108. Mr. Payne meets the AAIDD-11 and DSM 5 requirements for deficits in adaptive behavior due to substantial limitations in the Conceptual Skills and Practical Skills Domains. It is also my clinical judgment, informed by decades of scholarly work on ID, that Mr. Payne meets the second prong of the Tennessee ID statute when that statute is interpreted consistent with the AAIDD-11 and DSM 5 criteria.

Developmental Origin.

109. The third prong to the AAIDD-11, DSM 5, and the Tennessee ID Statute is that ID must be apparent during the developmental period, that is, by age 18. Ample evidence from multiple sources supports the existence of ID prior to age 18 including sworn affidavits, school records, and test scores. Mr. Payne was a person with ID prior to age 18.

Conclusion

110. It is my opinion, to a reasonable degree of scientific certainty, that Pervis Payne is a person with intellectual disability as conceptualized by leading professional associations and the State of Tennessee ID Statue. Mr. Payne has a functional intelligence performance in the critical range of IQ=65 to 75, along with significant deficits in adaptive behavior, and clear evidence of developmental origin, that is by age 18. Based on the above evidence, Mr. Payne is a person with Mild Intellectual Disability and should be so regarded in the settings where this diagnosis is relevant (*Atkins v. Virginia,* 2002; *Hall v. Florida,* 2014; *Moore v. Texas,* 2017).

9-26-2017

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Date

FORREST L MOTE
STATE OF TENNESSEE NOTARY PUBLIC
WILLIAMSON COUNTY TN
My Commission Expires September 30, 2019

Forrest L Mote

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AFFIDAVIT

COUNTY OF RUTHERFORD)
)

STATE OF TENNESSEE)

Affiant Rolanda Holman swears as follows:

1. I am an adult resident citizen of Murfreesboro, Rutherford County, Tennessee. I make the following statements based on personal knowledge.

2. Pervis Payne is my brother, I call him Bubba. I was twelve years old when Bubba was locked up.

3. When I am talking to Bubba and telling him something if it is not something simple I may have to explain more or say it a different way. If I am talking about my job or something complex that is what I have to do.

4. Bubba pays attention when others are talking. Sometimes he will interrupt but is just a casual interruption when what I am saying reminds him of something.

5. When Bubba was younger and living at home, he was able to follow simple directions. From what I recall he was able to follow and do what was requested if the instructions were short and simple. Sometimes my mom would give a series of stuff to do, a litany of things, and then he couldn't remember to do it all. However if she only told him two things to do such as clean the kitchen and vacuum then he'd remember. If you told him multiple things to do such as mow the yard, trim the trees and vacuum something is going to get left off.

6. Bubba can understand and answer simple questions but if the question is complex he may say "now what do you mean." He may ask a question to help him understand the question you asked.\

7. Sometimes Bubba would iron his own clothes and burn a hole in them because he had the temperature too high. When it came to good materials Mom would iron his clothes.

8. Mom would not let him wash clothes. He knew how to wash his paint clothes but as far as washing good clothes Mom washed those. He may put in too much washing powder.

9. We all had our responsibilities around the house. Bubba could clean the house, Mother taught him how to clean. My sister and I would help but Bubba enjoyed cleaning the house and would say to my sister and me, "you go on and play."

10. I used to love to vacuum and so when he would get to that point he would let me vacuum.

11. Mom would say, Oh, Pervis you do such a good job.

12. My sister, Bubba and I learned social skills by being actively involved in church. My sister and I would get up and read scripture in church. Bubba didn't read, so he couldn't do that.

13. Bubba's vocabulary is basic, he uses simple words. I don't know if he would know how to use complex words. Sometimes I need to ask him to help me understand when he's trying to tell me something.

14. Bubba couldn't help us with homework. Stan Buford a cousin who was a couple of years older than Bubba helped my sister with homework, or my mother would call her teacher friends for help. My sister who was two years older was able to help me with homework.

15. Once in a while Bubba will write me a short note to tell me to put money on his books, and sometimes he sends a card. There are some insufficiencies with his grammar, spelling and punctuation but I know what he is saying.

16. I heard my sister talking about Bubba trying to cook chicken and getting the outside done but the chicken being raw in the middle but I don't know about this from my own knowledge.

17. When Bubba worked with Dad, sometimes Dad had several projects going at the same time or he would have to go get supplies. He would leave Bubba at one project with instructions to finish painting a wall and Bubba would do it.

18. If Bubba didn't complete all his chores around the house, for example if Mom had told him to take chicken out and he didn't do it, he would say "I forgot."

19. At one time Bubba worked at the Pizza Hut but he had problems with making pizza.

20. I don't think Bubba set any long term goals and plans for himself. He was happy just finishing the job he was working on. He had no ambition to do more with his life. He was satisfied just working with Dad.

21. Bubba was not criticized for not doing well in school. I remember my mom not putting a lot on him. His learning abilities were not where they should be. When he did something well she praised him and when he didn't, she encouraged him that he

would do better the next time. There was no pressure from either my mom or dad for Bubba to do better in school. They accepted his limitations. I remember hearing about Bubba being in a resource class when he was in high school.

22. Bubba knew how to check oil in a car but not how to change the oil. Dad changed the oil in the cars and did maintenance on the vehicles. Dad taught Bubba how to change a flat tire. Anything hands on Bubba could do. If you gave him instructions to read that would be difficult for him, however if you showed him and told him step by step, he would learn better.

23. My mom did everything for him. He'd say what he needed and she enabled him.

I declare under penalty of perjury that the foregoing is true and correct.

Further the affiant saith naught.

Rolanda Holman

Sworn to and subscribed before me on

This 23 day of Sept, 2017.

GAYE NEASE
STATE OF TENNESSEE
NOTARY PUBLIC
DAVIDSON COUNTY, TENN.

Gaye Nease

Notary Public

My Commission Expires: 05/05/2020

AFFIDAVIT

COUNTY OF SHELBY)
)
STATE OF TENNESSEE)

Affiant Mary Williams swears as follows:

1. I am an adult resident citizen of Lakeland, Shelby County, Tennessee. I make the following statements based on personal knowledge.

2. I was a teacher in the Tipton County Tennessee school system and had Pervis Payne in my 9th grade English class.

3. Pervis Payne was a slow student. At the time when Pervis was in school, programs were not in place to identify and place students appropriately so they could receive all the help they needed.

4. I believe that Pervis had a resource English class as well as my English class. When this was the case the student would receive their grade through the resource class. When a student was in resource they were excused or omitted from some of the requirements. If they could show even some progress they would get a satisfactory grade.

5. Pervis was not a good reader. His comprehending and writing skills were very poor. His spelling was atrocious. He was a student who could never get it. He couldn't even memorize enough to pass a test. He just wasn't capable. He was just slow and smiling.

6. I my class, the students were required to a research and writing project. Pervis could not complete this assignment.

Further the affiant saith naught.

Mary Williams

Sworn to and subscribed before me on
This 28th day of June, 2017.

Gaye Nease
Notary Public

GAYE NEASE
STATE OF TENNESSEE NOTARY PUBLIC
SHELBY COUNTY OF DAVIDSON

My Commission Expires: 10/5/2020

Ex. D

DECLARATION

My name is WARREN MONEGO. I AM AN ADULT resident of Stephens County, OKLAHOMA. I was the manager of the Pizza Hut RESTAURANT IN MILLINGTON TN from 1985 to 1988.

PERVIS PAYNE WAS AN EMPLOYEE of the PIZZA HUT. I WAS his SUPERVISOR AND MANAGER. PERVIS PAYNE WAS SLOWER MENTALLY THAN the other EMPLOYEES. I CONSIDERED him to BE MENTALLY CHALLENGED.

MOST EMPLOYEES COULD BE TRAINED BY WATCHING other EMPLOYEES, BUT PERVIS COULDN'T. I HAD TO TAKE the TIME TO PERSONALLY SHOW HIM WHAT TO DO. Simple INSTRUCTIONS WERE POSTED AT THE WORK STATIONS, BUT EVEN AFTER PERSONALIZED TRAINING, PERVIS NEEDED TO LOOK AT THE INSTRUCTIONS ON A REGULAR BASIS, AND HAD TO BE REMINDED FREQUENTLY TO LOOK AT the INSTRUCTIONS. THIS WAS EXTREMELY UNUSUAL FOR AN employee IN A LAY JOB. He WAS forever TRYING to hide THE FACT that he WAS MENTALLY CHALLENGED.

I declare, UNDER PENALTY of PERJURY, UNDER the LAWS of the UNITED STATES, that the FOREGOING IS TRUE AND CORRECT.

July 28th 2010
WARREN MONEGO

AFFIDAVIT

COUNTY OF OBION)
)
STATE OF TENNESSEE)

Affiant Carl Payne swears as follows:

1. I am an adult resident citizen of Union City, Obion County, Tennessee. I make the following statements based on personal knowledge.

2. Pervis Payne is my oldest child.

3. It took Pervis longer to walk and longer to talk than my other children.

4. Pervis stuttered up until the time he was in the twelfth grade.

5. Pervis does not have a large vocabulary. He used simple sentences.

6. Pervis is a poor speller.

7. Pervis didn't read unless he absolutely had to. When he was in school, we used to have to make him read. My wife had to help him get his lessons every night. Pervis needed help with his homework most of the time.

8. Pervis could be tricked and fooled by others sometimes. However, Pervis could not see it that way.

9. Pervis never prepared meals for the family and he did not do his own laundry.

10. Pervis was able to be a helper to me in our painting business. We painted both new constructions and established structures including businesses and private residences. Sometimes we had to scrape off old paint and some of the old paint was lead-based paint. We scraped off paint both inside and outside. We would scrape off the paint and put it into garbage bags and put it in a dumpster.

11. Pervis could follow simple directions or instructions that I gave him orally but I generally had to repeat them several times to be sure he understood. If the instructions had too many steps, he could not follow them. I never gave Pervis written directions.

12. Working with our painting company, Pervis just went along with me. I tried to teach him, but he was not able to use a tape measure or ruler and figure out the amount of paint needed. I could not let Pervis bid on a job.

13. Since Pervis has been in prison, he may write a short note in a birthday card but he is not into writing.

Further the affiant saith naught.

Carl Payne

Carl Payne

Sworn to and subscribed before me on
This 16th day of July, 2017.

Gaye Nease

Notary Public

GAYE NEASE
STATE OF TENNESSEE NOTARY PUBLIC
COUNTY OF DAVIDSON

My Commission Expires: 05/05/2020

Reduced Intellectual Development in Children with Prenatal Lead Exposure

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OBJECTIVE: Low-level postnatal lead exposure is associated with poor intellectual development in children, although effects of prenatal exposure are less well studied. We hypothesized that prenatal lead exposure would have a more powerful and lasting impact on child development than postnatal exposure.

DESIGN: We used generalized linear mixed models with random intercept and slope to analyze the pattern of lead effect of the cohort from pregnancy through 10 years of age on child IQ from 6 to 10 years. We statistically evaluated dose–response nonlinearity.

PARTICIPANTS: A cohort of 175 children, 150 of whom had complete data for all included covariates, attended the National Institute of Perinatology in Mexico City from 1987 through 2002.

EVALUATIONS/MEASUREMENTS: We used the Wechsler Intelligence Scale for Children–Revised, Spanish version, to measure IQ. Blood lead (BPb) was measured by a reference laboratory of the Centers for Disease Control and Prevention (CDC) quality assurance program for BPb.

RESULTS: Geometric mean BPb during pregnancy was 8.0 μg/dL (range, 1–33 μg/dL), from 1 through 5 years was 9.8 μg/dL (2.8–36.4 μg/dL), and from 6 through 10 years was 6.2 μg/dL (2.2–18.6 μg/dL). IQ at 6–10 years decreased significantly only with increasing natural-log third-trimester BPb ($\beta = -3.90$; 95% confidence interval, −6.45 to −1.36), controlling for other BPb and covariates. The dose–response BPb–IQ function was log-linear, not linear–linear.

CONCLUSIONS: Lead exposure around 28 weeks gestation is a critical period for later child intellectual development, with lasting and possibly permanent effects. There was no evidence of a threshold; the strongest lead effects on IQ occurred within the first few micrograms of BPb.

RELEVANCE TO CLINICAL PRACTICE: Current CDC action limits for children applied to pregnant women permit most lead-associated child IQ decreases measured over the studied BPb range.

KEY WORDS: child development, intelligence, lead, prenatal exposure delayed effects. *Environ Health Perspect* 114:791–797 (2006). doi:10.1289/ehp.8552 available via *http://dx.doi.org/* [Online 29 December 2005]

Prospective lead studies of child development from the 1980s to date show associations between low blood lead (BPb) concentration and poor neurobehavioral development (Baghurst et al. 1992; Bellinger 1989; Bellinger et al. 1986, 1987, 1994; Bornschein et al. 1985; Dietrich 1991; Dietrich et al. 1987a, 1987b, 1991, 1993a, 1993b; McMichael et al. 1988, 1992; Schnaas et al. 2000; Wasserman et al. 1992, 1994, 1997, 2000a, 2000b), although the focus of most of these studies has been postnatal exposure. Only some studies included measurement of maternal BPb during pregnancy or at delivery (Bornschein et al. 1985; Graziano et al. 1990; Rothenberg et al. 1994). A Yugoslavia study (Wasserman et al. 2000a) used a repeated-measures design and found that increased mid-pregnancy BPb (12–20 weeks) was significantly associated with decreased 3- to 7-year intelligence quotient (IQ) regardless of pattern of postnatal exposure. A Cincinnati, Ohio (USA), study (Ris et al. 2004) showed lasting significant effects of BPb between 6 and 28 weeks on factor scores representing attention and visuoconstruction in adolescents when prenatal BPb was tested without simultaneously considering postnatal BPb exposure history.

Ideally, we would like to include the entire history of lead exposure in assessing lasting effects of lead on child development. When the study sample is exposed to relatively constant sources of environmental lead, there is often substantial tracking of BPb over time (Tong et al. 1996; Wasserman et al. 2000a), producing high correlations among serial BPb levels between and within prenatal and postnatal periods. Collinearity among highly correlated BPb variables in the same linear model will produce biased estimates of lead effect with inflated SEs. On the other hand, piecemeal analysis of lead effects, testing one period of lead exposure at a time, ignores potential effects of earlier or later exposure. Such omission could lead to residual confounding of tested lead effects.

The principal lead exposure sources in pregnant women and their children in the Mexico City Prospective Lead Study were air lead and lead from ceramic ware (Schnaas et al. 2004). Air lead decreased continually throughout the 15-year study period because of reduction and elimination of lead in gasoline. Individual exposure to leaded ceramic ware was both idiosyncratic and intermittent. Such variable individual lead exposure substantially reduced BPb tracking in this sample and allowed an analysis of the effect of lead exposure from 12 weeks of pregnancy through the first 10 years of life on child intelligence from 6 to 10 years of age.

Materials and Methods

Subjects. The subjects belonged to a cohort of children born in Mexico City at the National Institute of Perinatology between 1987 and 1992, followed until 2002. The Ethics Committee of the National Institute of Perinatology approved the research protocol. Investigators met with parents, verbally explained the project, and asked them to read the description in the informed consent and to sign if they wished to participate with their child. We recruited women at 12 weeks of pregnancy and measured BPb every 8 weeks to delivery. We also measured BPb from maternal and cord blood at delivery. A total of 321 children born to these women met the following inclusion criteria: child born with at least 36 weeks of gestational age, 5-min Apgar score ≥ 6, birth weight > 2,000 g, without major or minor congenital anomalies or being the product of multiple birth. We evaluated children with psychometric tests, anthropometric measurements, and BPb at 6-month intervals after birth. We collected data on demographic, socioeconomic, and other factors that might constitute potential confounders or important control variables modifying the relationship between lead and child development.

Of the 321 infants comprising the original sample, we successfully tested 175 children after 5 years of age.

BPb measurements. Venous blood was drawn into purple-top Becton-Dickinson Vacutainers (Franklin Lakes, NJ, USA) with

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The authors declare they have no competing financial interests.

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EDTA anticoagulant. Environmental Science Associates Laboratories Inc. (Chelmsford, MA, USA) determined BPb in duplicate analysis by anodic stripping voltammetry. Samples with mean duplicate values < 5 μg/dL were reanalyzed via atomic absorption spectrometry. Quality control information is provided elsewhere (Rothenberg et al. 1994). The lab is a reference laboratory for the Centers for Disease Control and Prevention (CDC) Blood Lead Laboratory Reference System (Atlanta, GA, USA) and participates in the Commonwealth of Pennsylvania Department of Health Blood Lead Proficiency Testing Program (Exton, PA, USA). BPb during pregnancy was measured every 8 weeks starting at week 12 of pregnancy. We used the geometric mean of lead at 12 and 20 weeks as the lead measure for the second trimester of pregnancy and the geometric mean of lead at 28 and 36 weeks as the lead measure for the third trimester of pregnancy. We calculated geometric mean BPb from biannual measurements from 6 months to 5 years and used BPb at each age from 6 to 10 years to measure lead exposure contemporaneous with each year's IQ measurement. In supplementary models, we also used maternal BPb at each prenatal measurement and postnatal geometric mean yearly BPb from 1 to 5 years.

Developmental assessment. We assessed child intelligence under standardized conditions with the Wechsler Intelligence Scale for Children–Revised (WISC-R; Spanish version) (Wechsler 1981a), providing a Full-scale IQ (FSIQ). The WISC-R has 12 subtests, six of which are used to estimate a Verbal IQ (VIQ), and the remaining six a Performance IQ (PIQ). Three psychologists unaware of child BPb evaluated IQ. For each child evaluated by a psychologist, the two other psychologists reviewed the test protocols and assigned scores given by the examiner for each test. An analysis of variance with post hoc testing for mean IQ grouped by examining psychologist and child age was used to assess possible psychologist bias.

Covariates. We measured maternal IQ with the Wechsler Adult Intelligence Scale (Spanish) (Wechsler 1981b). We constructed an index for socioeconomic status (SES) based on head of household education and occupation, and family income. We evaluated degree of stimulation and quality of caretaker–child interaction in the home environment using the HOME Scale (Home Inventory for Families of Infants and Toddlers) (Caldwell and Bradley 1984). All covariates used in statistical analyses were collected during pregnancy or in the first 6 postpartum months.

Data analyses. We used Fisher exact tests, Pearson chi-squared with exact probability, or *t*-tests to contrast subjects included in the analysis, subjects lost to follow-up in the first 5 postnatal years, and subjects with incomplete post-5-year data with the variables sex, SES, BPb at different ages, maternal IQ and educational level, and postnatal developmental scores.

Descriptive statistics, identification of outliers, and appropriate transformations were performed before bivariate and multivariate analyses. BPb was converted to natural logarithms to eliminate heteroskedasticity and normalize skewed distributions of residuals, reduce the influence of outlying high lead values on regression coefficients, and adequately specify the functional relation of BPb on FSIQ. We examined associations between the FSIQ measured from 6 to 10 years of age and each measurement of lead exposure in panel regression analyses (Kennedy 2003), first without covariates and then controlling by child sex, SES, maternal IQ, HOME, and birth weight, instead of bivariate regressions, to adjust the regressions for repeated measurements of IQ in each subject.

Because the data are multilevel with BPb at each age nested within children, we used a linear mixed model to analyze the pattern of lead effect on FSIQ evaluated from 6 to 10 years of age. The dependent variable was FSIQ at ages 6, 7, 8, 9, and 10, whereas the independent variables with fixed effects were maternal IQ, child sex, SES, birth weight, geometric mean of BPb during the first 5 years of age, BPb at each age at which the FSIQ measurements were made, geometric mean of BPb during the second and third trimester of pregnancy, and a dummy variable indicating the first FSIQ measurement of the child, allowing control for test learning between the first IQ measurement and the following ones. Some children had their first WISC-R test at 6 years of age; others were first tested at 7 or 8 years.

We included as random effects subject and BPb measured at each year of WISC-R FSIQ measurement of the child. We modeled the covariance matrix of the residual error by a first-order autoregressive process. We used the likelihood ratio test to determine if the addition of random intercepts, random slopes, and autoregressive residual covariance matrix significantly improved model fit.

To examine the effect of simultaneous inclusion of all lead variables, we constructed several mixed models each with only one lead variable and statistically compared those lead coefficients with the lead coefficients of the mixed model with all lead variables. We also constructed mixed models without the control variables to determine lead coefficients unadjusted for covariates. We performed the same analyses for VIQ and PIQ.

We used the Bayesian Information Criterion (Hardin and Hilbe 2001) to determine which model best fit the data. The information criterion includes a penalized function based on number of estimated parameters. If the number of parameters increases without substantial model improvement, the information criterion also increases, indicating a poorer data fit.

The two-level model had two different residuals: level-1 residuals, annual observations calculated by subtracting the linear predictor from the FSIQ; and level-2 residuals, the empirical Bayes predictions considered as higher-level residuals.

To check the normality of the two residual types, we generated kernel density plots with overlaid normal density functions and plotted quartiles of the residuals against quartiles of a normal distribution to emphasize possible non-normality near the tails. Shapiro-Wilk and Shapiro-Francia tests were also used to check residual normality. We divided level-2 residuals by the SEs (from the posterior SDs) to detect outliers and plotted residuals against predictions to examine homoskedasticity.

In addition to calculating correlations among BPb variables to assess potential for collinearity, we also ran an artificial multiple regression with the full mixed-model variables to calculate the variance inflation factors (VIFs) (Hardin 1995) for the lead terms. As a final check on the possibility that collinearity among lead variables significantly affected the pattern of results in the mixed model, we converted the group of lead variables to orthogonal variables and ran the model again.

We refit the mixed models with linear lead terms and used the *J*-test (MacKinnon 1981) to determine if the logarithmic specification of the lead variables produced a better fit to the data than a linear lead specification.

Results

From the sample of 175 children retained to 6 years of age, we studied 150 with complete data for all covariates included in the model. There were no significant differences in sex, SES, birth weight, FSIQ of the child, maternal IQ, BPb at second trimester, and geometric mean BPb from 1 to 5 years of age between children included and not included in the analyses (Table 1). BPb in the third trimester of pregnancy and at 9 and 10 years of age was significantly lower in the group with complete data.

More of the group dropping out before reaching 6 years tended to be in the lowest SES, compared with the tested group with complete data. Bayley (1969) and McCarthy (1972) developmental scores also tended to be lower for this group.

The Pearson correlation between the 12- to 20-week and 28- to 36-week prenatal natural log BPb was 0.48, between either of the prenatal and any of the postnatal BPb ≤ 0.23, and between the 1- to 5-year and 6- to 10-year postnatal BPb = 0.70. VIFs for all variables in

the model were < 2.2 (mean VIF = 1.45), where VIF ≥ 10 is considered significant (Chaterjee et al. 2000). Models using orthogonal lead variables showed no change in model results. Collinearity among simultaneously included lead variables in the models was not a factor in the results presented below. Figure 1 shows the distribution of BPb from the cohort followed to 6–10 years of age.

Fixed-effects panel regression analyses, unadjusted for covariates, testing separate prenatal, perinatal, and postnatal BPb with FSIQ of the child showed IQ reduction associated with BPb increase for all lead measurements (Table 2). However, the only significant BPb effects were with BPb at third trimester of pregnancy and BPb measured simultaneously with IQ tests.

We performed panel analyses for FSIQ with each of the other covariates alone. All covariates were associated with IQ in the expected direction, but only maternal IQ ($p < 0.001$), maternal educational level ($p < 0.001$), SES ($p < 0.01$), and HOME score ($p < 0.05$) showed positive significant effects on the FSIQ of the child (analyses not shown).

Using a linear mixed model with random intercept and random slope for 6- to 10-year BPb and adjusting for all covariates (Table 3, model A), we found that children whose mothers had higher BPb during 28–36 weeks of pregnancy had significantly lower FSIQ, children of the higher IQ mothers had higher FSIQ at all ages, and child FSIQ in the first evaluation was significantly lower than in subsequent evaluations. Most other remaining

Table 1. Comparison among subjects included in the model and subjects with incomplete data, or not assessed beyond 5 years of age.

Characteristics	Not assessed beyond 5 years of age		Subjects with incomplete data		Subjects included in the model			
	No. (%)	BPb GM (5th–95th)[a]	No. (%)	BPb GM (5th–95th)[a]	No. (%)	BPb GM (5th–95th)[a]	*p*-Value[b]	*p*-Value[c]
Sex								
Male	83 (56.8)		12 (48.0)		79 (52.7)		0.49[d]	0.67[d]
Female	63 (43.2)		13 (52.0)		71 (47.3)			
SES								
Lowest	60 (42.9)		3 (12.0)		20 (13.3)		< 0.001[d]	0.82[d]
Medium	77 (55.0)		16 (64.0)		93 (62.0)			
Highest	3 (2.1)		6 (24.0)		37 (24.7)			
Apgar 5 min								
6	1 (0.7)		0 (0.0)		1 (0.7)		0.98[d]	1.00[d]
7	1 (0.7)		0 (0.0)		0 (0.0)			
8	8 (5.6)		1 (4.0)		9 (6.0)			
9	134 (93.1)		24 (96.0)		139 (92.6)			
10	0 (0.0)		0 (0.0)		1 (0.7)			
Birth order								
1	62 (42.8)		11 (44.0)		73 (48.7)		0.42[d]	0.87[d]
2	49 (33.8)		9 (36.0)		48 (32.0)			
3	28 (19.3)		3 (12.0)		22 (14.7)			
4	4 (2.8)		2 (8.0)		7 (4.7)			
≥ 5	2 (1.3)		0 (0.0)		0 (0.0)			
Birth weight (g)	144	3,194 (2,503–4,000)	25	3,148 (2,569–3,818)	150	3,218 (2,450–3,911)	0.64	0.46
Maternal IQ	127	91 (68–113)	25	96 (65–115)	150	93 (71–112)	0.31	0.26
Prenatal lead								
12–20 weeks	126	8.4 (7.6–9.1)	10	8.2 (3.0–13.7)	150	8.2 (3.0–20.7)	0.20	0.98
28–36 weeks	129	7.3 (1.5–17.4)	11	13.0 (5.3–27.0)	150	7.8 (2.5–24.6)	0.49	0.02
Bayley Scales of Infant Development								
MDI at 6 months	122	115.0 (91–140)	20	117.4 (98–137)	135	115.3 (89–144)	0.87	0.60
MDI at 12 months	103	114.1 (94–134)	25	115.2 (86–131)	137	115.7 (93–134)	0.33	0.85
MDI at 18 months	87	104.3 (78–128)	23	112.3 (102–128)	139	107.9 (88–128)	0.05	0.11
MDI at 24 months	69	103.5 (79–132)	21	119.8 (94–150)	135	109.5 (87–132)	0.009	0.003
McCarthy Scale								
GCI at 36 months	37	97.6 (64–117)	22	102.0 (89–118)	133	100.8 (85–116)	0.11	0.61
GCI at 42 months	25	98.7 (82–118)	20	110.1 (101–122)	133	105.1 (86–121)	0.01	0.06
GCI at 48 months	30	93.8 (60–130)	24	105.5 (85–119)	137	102.3 (81–122)	0.003	0.26
GCI at 54 months	18	95.8 (57–129)	22	106.8 (88–120)	124	104.1 (89–119)	0.008	0.29
GCI at 60 months	15	98.9 (62–127)	18	108.8 (82–121)	126	104.8 (88–119)	0.048	0.12
WISC FSIQ (years of age)								
6			23	109 (91–126)	140	105 (87–123)		0.17
7			20	109 (88–127)	140	109 (91–127)		0.93
8			21	109 (90–130)	127	108 (91–126)		0.72
9			16	114 (98–141)	120	109 (91–128)		0.09
10			15	112 (94–140)	115	109 (87–130)		0.45
Postnatal lead (years of age)								
1	131	10.0 (3.2–18.8)	23	11.6 (5.5–19.8)	142	10.8 (4.0–22.0)	0.40	0.54
2	93	12.0 (4.2–25.2)	25	13.1 (5.8–23.0)	142	12.8 (5.0–25.8)	0.42	0.82
3	52	11.6 (5.0–23.5)	25	12.2 (5.2–19.8)	140	11.3 (4.7–22.9)	0.74	0.52
4	38	8.9 (3.2–18.5)	25	11.3 (4.8–19.0)	142	10.3 (4.2–20.5)	0.13	0.46
5	22	9.0 (3.5–16.5)	22	10.6 (5.0–19.2)	136	9.3 (3.8–18.0)	0.78	0.26
6			21	9.3 (4.5–20.8)	135	7.9 (3.2–16.0)		0.14
7			21	8.9 (4.2–17.0)	142	7.5 (3.0–13.8)		0.13
8			20	7.5 (2.5–14.6)	132	6.4 (2.8–12.8)		0.17
9			21	7.7 (3.5–12.5)	123	6.0 (2.8–11.8)		0.025
10			15	7.8 (3.0–19.2)	118	5.6 (2.5–11.2)		0.008

Abbreviations: GCI, General Cognitive Index; GM, geometric mean; MDI, Mental Development Index.
[a]Percentiles. [b]Subjects included in the model versus subjects not assessed beyond 5 years of age. [c]Subjects included in the model versus subjects with incomplete data. [d]Fisher's exact test of Pearson chi-square exact probability. Unmarked probabilities by *t*-test for independent samples.

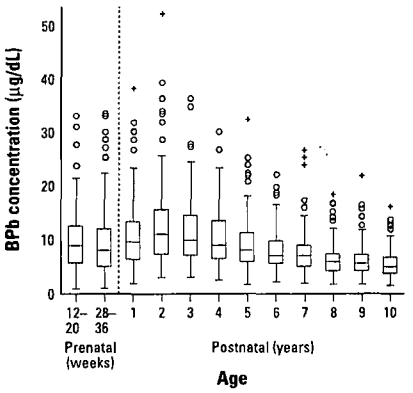

Figure 1. Box plots of BPb by age of the 150 children sampled for the linear mixed-model analyses. The lower and upper limits of the rectangular boxes indicate the 25th to 75th percentile range, and the horizontal line within the boxes is at the 50th percentile. The vertical lines extending from the bottom and top of the boxes represent lead values 1.5 times the interquartile range below and above the 25th and 75th percentile, respectively. Open circles represent lead values between 1.5 and 3.0 times the interquartile range below and above the 25th and 75th percentile, and pluses indicate lead values exceeding 3.0 times the interquartile range limit. Plots for each age, with extreme high values, are typical for log distributions plotted on a linear scale. Conversion factor: 10 µg/dL = 0.483 µmol/L.

covariates were associated with child intelligence in the expected direction but were not significant.

We developed additional models containing all prenatal and postnatal BPb with only the covariates that were significant in the full linear mixed model (maternal IQ and the dummy variable for the first FSIQ measurement of the child). Nonsignificant BPb variables were eliminated, so the model then included only significant covariates (Table 3, model D). The third-trimester BPb coefficients in all additional models with progressive deletion of nonsignificant variables (Table 3, models B, C, and D) were not significantly different from the coefficient found in the full mixed model (Table 3, model A), also suggesting minimal collinearity effects.

In the linear mixed model with VIQ as the dependent variable, higher 28- to 36-week BPb was associated with lower intellectual coefficient of the child ($\beta = -3.15$, $p = 0.007$), and children of higher IQ mothers had better performance ($\beta = 0.29$, $p < 0.001$). There was no significant change in the VIQ from the first evaluation to subsequent evaluations.

In the linear mixed model with PIQ as the dependent variable, 28- to 36-week BPb was inversely associated with child IQ ($\beta = -4.37$, $p = 0.004$), and children of the higher IQ mothers had better performance ($\beta = 0.40$, $p < 0.001$). We also observed significant PIQ improvement from first to subsequent tests ($\beta = 7.2$, $p < 0.001$).

To evaluate more precisely at which pregnancy stage maternal BPb was best associated with later reduction in child IQ, we constructed a linear mixed model adjusted by the same covariates used in the full linear mixed model (Table 3, model A) but exchanged the averaged prenatal BPb variables for prenatal BPb at week 12, 20, 28, or 36 of pregnancy. BPb at week 28 of pregnancy was the only prenatal lead measure significantly predicting lower FSIQ ($\beta = -4.13$, $p < 0.001$) (Table 4).

To statistically test whether natural log BPb transformation fit the data significantly better than a linear BPb specification, we used the *J*-test to compare the two specifications of lead at the third trimester of pregnancy on FSIQ in the full model (Table 3, model A). The logarithmic form of third-trimester BPb fit the data significantly better than did a linear functional form ($t = 2.15$, $p = 0.02$).

Figure 2 shows a partial residual plot of the effect of third-trimester maternal BPb on FSIQ at 8 years of age adjusted for the covariates and

Table 2. Nonadjusted and adjusted models of FSIQ (panel regressions).

	Unadjusted				Adjusted[a]		
Lead variable (µg/dL)	No.	β	95% CI	*p*-Value (two-tailed)	β_{adj}	95% CI	*p*-Value (two-tailed)
Ln(lead) 12–20 weeks	150	−1.90	−4.79 to 0.98	0.20	−1.45	−4.75 to 2.00	0.42
Ln(lead) 28–36 weeks	150	−3.84	−6.24 to −1.44	0.002	−4.00	−6.37 to −1.65	0.001
Maternal ln(lead) delivery	112	−1.77	−5.12 to 1.57	0.29	−1.29	−4.41 to 1.83	0.41
Umbilical cord ln(lead)	109	−0.69	−3.50 to 2.11	0.63	−0.95	−3.65 to 1.75	0.49
Mean ln(lead) (1–5 years)	150	−2.41	−6.38 to 1.57	0.23	0.49	−3.81 to 4.81	0.82
Ln(lead) at 1 year of age	142	−1.51	−4.96 to 1.94	0.39	0.51	−3.19 to 4.21	0.79
Ln(lead) at 2 years of age	143	−1.10	−4.49 to 2.29	0.39	0.91	−2.67 to 4.49	0.62
Ln(lead) at 3 years of age	140	−2.53	−6.22 to 1.15	0.18	−0.58	−4.53 to 3.37	0.78
Ln(lead) at 4 years of age	142	−0.61	−4.34 to 3.12	0.75	1.17	−2.67 to 5.02	0.55
Ln(lead) at 5 years of age	136	−2.96	−6.67 to 0.75	0.12	−0.32	−4.26 to 3.36	0.87
Mean ln(lead) (1–2 years)	147	−1.78	−5.46 to 1.90	0.34	0.60	−3.36 to 4.57	0.76
Mean ln(lead) (3–5 years)	150	−2.63	−6.47 to 1.22	0.18	−0.08	−4.15 to 3.98	0.96
Mean ln(lead) (6–10 years)	150	−2.70	−4.23 to −1.16	0.001	−2.45	−4.09 to −0.81	0.003

CI, confidence interval. Each lead variable was tested alone.
[a]Adjusted by maternal IQ, SES, sex, birth weight, an indicator variable of first FSIQ application at 6, 7, or 8 years.

Table 3. Linear mixed models of FSIQ with random intercept and random slope for 6–10 year BPb (µg/dL): fixed-effects estimations.

	Model A (full model)			Model B (without nonsignificant control variables)			Model C (model B without nonsignificant lead before 6–10 years)			Model D (without any nonsignificant variables)		
Variable	β	95% CI	*p*-Value[a]	β	95% CI	*p*-Value	β	95% CI	*p*-Value	β	95% CI	*p*-Value
Intercept	73.6	52.4 to 94.6	< 0.0001	73.6	56.9 to 90.4	< 0.0001	75.8	62.6 to 88.0	< 0.0001	76.3	63.7 to 88.9	< 0.0001
Mean ln(lead) 12–20 weeks pregnancy (µg/dL)	1.02	−1.98 to 4.03	0.50	0.89	−2.09 to 3.88	0.56						
Mean ln(lead) 28–36 weeks pregnancy (µg/dL)	−3.90	−6.45 to −1.36	0.0029	−3.85	−6.36 to −1.33	0.0029	−3.46	−5.64 to −1.29	0.0020	−3.44	−5.61 to −1.28	0.0020
Mean ln(lead) 1–5 years (µg/dL)	0.10	−3.88 to 4.06	0.96	0.35	−3.48 to 4.18	0.86						
Ln(lead) 6–10 years (µg/dL)	0.17	−1.41 to 1.76	0.83	0.15	−1.44 to 1.72	0.86	0.21	−1.30 to 1.72	0.79			
Child sex (female)	−1.51	−4.75 to 1.73	0.36									
Birth weight (g)	0.001	−0.003 to 0.004	0.61									
SES (tertiles)	−0.38	−1.86 to 1.10	0.61									
Maternal IQ	0.40	0.26 to 0.55	< 0.0001	0.39	0.26 to 0.52	< 0.0001	0.39	0.26 to 0.51	< 0.0001	0.38	0.26 to 0.51	< 0.0001
First FSIQ measurement	−4.00	−4.84 to −3.16	< 0.0001	−4.00	−4.82 to −3.15	< 0.0001	−4.00	−4.83 to −3.16	< 0.0001	−4.00	−4.78 to −3.16	< 0.0001

CI, confidence interval.
[a]Two-tailed.

other BPb values in the full model (Table 3, model A).

Discussion

Increased maternal lead concentration at third trimester of pregnancy, especially around week 28, was associated with decreased intellectual child development, even after controlling for other prenatal and postnatal lead measurements. Other studies found significant adverse associations between postnatal BPb and IQ (Baghurst et al. 1992; Bellinger et al. 1992; Dietrich et al. 1993b; Wasserman et al. 1997). In our panel unadjusted regression analyses, we noted a significant effect of 6- to 10-year BPb on child IQ as well, but this effect lost significance when other BPb and covariates were included in mixed-model analysis. Collinearity between prenatal and 6- to 10-year BPb variables was not responsible for loss of explanatory power of 6- to 10-year BPb, as shown in the extensive diagnostic testing reported in "Results." Given the modest sample size and relatively low power of this study, we do not claim that lead exposure from 6 to 10 years or any other developmental period has no effect on child IQ. More likely, third-trimester lead exposure is a more powerful predictor of later child IQ and absorbed enough of the variation in IQ formerly attributed to 6- to 10-year BPb to render it insignificant in our model.

In contrast to other studies in which prenatal lead exposure biomarkers were umbilical cord BPb (Bellinger et al. 1992) or one (Dietrich et al. 1993b; Ris et al. 2004; Wasserman et al. 1997, 2000a) or at most two (Baghurst et al. 1992) maternal lead measurements during pregnancy, we measured prenatal lead exposure systematically (within an interval of ± 2 weeks) during specific pregnancy stages (weeks 12, 20, 28, and 36 of pregnancy, at delivery, and in umbilical cord). We note that 28-week fetal central nervous system development is distinctly different than development either at 12 weeks or at term. Neuroblast proliferation is essentially complete before 28 weeks, whereas neuronal migration and aggregation continue through the first half of the third trimester. Myelination of tracts within the developing human fetal brain has just begun by 25 weeks (Herschkowitz 1988). Deeper cortical layers are poorly defined at 24 weeks, clearly developed at 28 weeks, and reach postnatal appearance by 34 weeks of pregnancy (Larsen 1997). Limiting the range of permitted weeks of pregnancy for placing each maternal BPb in its nominal category probably enhanced our ability to detect pregnancy phase-specific BPb effects.

Other studies did not simultaneously include all lead measurements in their analyses, although one (Wasserman et al. 2000a) included directional postnatal lead change indicators along with the single pregnancy BPb variable. We were able to include the entire history of lead exposure in our analyses because collinearity among the lead measures was not a significant factor. In our analysis, simultaneous inclusion of 6- to 10-year BPb and the remaining BPb reduced the size of the 6- to 10-year lead coefficient without changing its variance, rendering it insignificant. With the increased power afforded by a larger sample size, 6- to 10-year BPb might well have retained its significance.

Methodologic considerations. A frequent problem in cohort studies is high loss rate during extended follow-up. From an original sample of 321 children, we tested 175 available children after 5 years of age, of which only 150 were included in mixed-model analyses due to missing covariates. The smaller number of subjects reduced the possibility of detecting subtle effects and increased the possibility of instability of model coefficients. Nevertheless, despite the medium sample size, we found a highly significant effect of maternal third-trimester BPb on child IQ at 6–10 years of age with little evidence of selective dropout bias in the descriptive statistics.

In addition to longitudinal analyses, we carried out separate analyses of IQ at each age. The pattern of results was consistent in these analyses; 28- to 36-week BPb and maternal intellectual quotient were the variables significantly predicting child IQ.

Repeated use of the same test to evaluate child IQ at short intervals could lead to learning of test components across time and a familiarization with the test situation. We found a significant change (Table 3) only between the first FSIQ measurement and the subsequent measurements, nearly all of which was due to increase in the performance scale. Repeated test application produced a significant adjusted increase of 7.2 PIQ points and 4.0 FSIQ points from first to subsequent test applications. This might be expected in children encountering performance tasks for the first time during the initial test application.

Studies in developmental toxicity have shown that subtle developmental alterations are easier to detect when subjects confront challenging or stressful situations (Cory-Slechta 1990; Rice and Baron 2000). Familiarity with the test situation and repetition of the same test should have reduced our ability to detect subtle developmental deficits associated with lead. We conclude that the lead effect described is robust.

Other studies found a substantial impact of sociodemographic variables on IQ. Several studies reported significant associations between lead and child development that disappear (Ernhart et al. 1989) or become evident (Wasserman et al. 1997) when HOME score was used as a covariate. We applied the 6-month HOME Scale in our study but did not include it in full modeling because it did not appreciably or significantly change the estimated magnitude and significance of BPb and because model fit improved according to the Bayesian Information Criterion (Hardin and Hilbe 2001) when this covariate was omitted (see Appendix for mixed models with HOME added). In contrast to our models, other studies found the HOME Scale useful.

Table 4. Linear mixed model of FSIQ with random intercept and random slope for concurrent lead (n = 122) Test of prenatal lead concentration at week 28 of pregnancy: fixed-effects estimations.

Variable	β	95% CI	p-Value (two-tailed)
Intercept	79.5	56.5 to 102.5	< 0.0001
Ln(lead) 28 weeks pregnancy (μg/dL)	−4.13	−6.45 to −1.81	0.0006
Mean ln(lead) 1–5 years (μg/dL)	−1.01	−5.54 to 3.52	0.66
Ln(lead) 6–10 years (μg/dL)	0.21	−1.46 to 1.88	0.81
Child sex (female)	−1.21	−4.87 to 2.45	0.52
Birth weight (g)	0.001	−0.003 to 0.005	0.61
SES (tertiles)	−0.40	−1.27 to 2.07	0.64
Maternal IQ	0.38	0.22 to 0.54	< 0.0001
First FSIQ application	−3.52	−4.43 to −2.61	< 0.0001

CI, confidence interval.

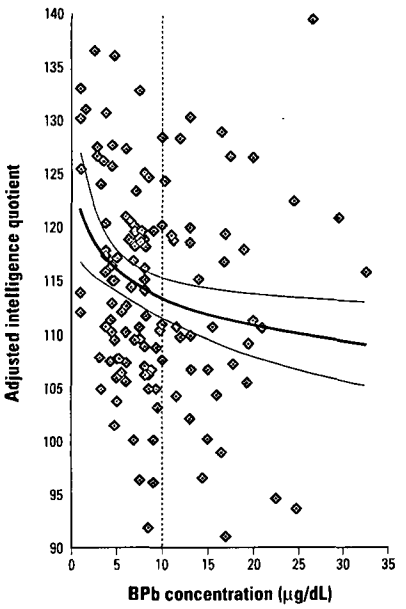

Figure 2. Partial residual plot of the effect of third-trimester maternal BPb (thin lines: 95% confidence interval) on FSIQ at 8 years of age adjusted for maternal IQ, sex, birth weight, SES, and BPb levels at other prenatal and postnatal ages. Conversion factor: 10 μg/dL = 0.483 μmol/L.

The HOME Scale is distinctly Euro-North American culture bound. For example, we found that many homes we visited did not have items such as educational toys, which were not readily available in the domestic market at that time, thus altering the HOME score of our subjects. Furthermore, 6-month evaluations might be expected to play little role in development at 6–10 years.

If increased third-trimester BPb levels were associated with decreased birth weight and low birth weight was associated with poor postnatal intellectual development, the modeled effect of third-trimester BPb on 6- to 10-year IQ could be mediated through lead effect on birth weight. Our subject inclusion criteria accepted only newborn infants into the study with birth weight > 2,000 g (the Mexican standard for low birth weight at the time of the study), thus excluding cases with the highest probability of showing later deficits due to low birth weight. Exploratory modeling showed that no prenatal BPb was significantly associated with birth weight. Finally, excluding or including birth weight in mixed-model analyses changed the 28- to 36-week BPb coefficient by less than 0.03. There is no evidence in these data that third-trimester BPb effect on 6- to 10-year-old IQ was mediated by lead effect on weight.

Both the Spanish WISC-R for child IQ and the Spanish Wechsler Adult Intelligence Scale used for maternal IQ have since been superseded by updated, renormalized versions. The tests we used were the only Spanish language versions available during data collection. We note that the IQ scores measured in our sample were generally higher than those obtained in other prospective studies, perhaps as a result of using outdated tests. Although the current version of the WISC might reveal the bias in the absolute IQ associated with lead in these data, the covariation between BPb and IQ was likely not affected by the specific test version used.

Public health implications. These data suggest that the early third trimester of pregnancy may constitute a critical period for subsequent intellectual child development, during which lead exposure can produce lasting and possibly permanent effects. In addition, the data suggest there is no threshold for the adverse consequences of lead. On the contrary, the largest IQ changes in our sample are observed within the first few micrograms per deciliter of BPb—that is, at lower BPb (Figure 2). The relationship between BPb and child IQ is logarithmic, not linear, as shown by the significant ($p \approx 0.02$) *J*-test. Other studies have already reported larger IQ change with change of lead at lower concentrations than at higher concentrations (Canfield et al. 2003; Lanphear et al. 2000; Schwartz 1994). A recent reanalysis of a large (n = 1,333) pooled data analysis (Lanphear et al. 2005) of seven prospective lead studies, including this one, also confirms that the log-linear dose–response relationship between IQ around 7 years of age and contemporary BPb is superior to a linear–linear dose–response relationship (Rothenberg and Rothenberg 2005).

We noted the same pattern of BPb change during pregnancy in this study (Rothenberg et al. 1994) observed in other studies in the United States (Hertz-Picciotto et al. 2000; Schell et al. 2000). Postnatal BPb pattern with age has already been examined in detail in this cohort (Schnaas et al. 2004) and is similar to that from United States and Australian prospective studies (Dietrich et al. 1991; McMichael et al. 1988). Postnatal BPb peaks around 2 years of age and then decreases with increasing age (Figure 1). Because our cohort did not exhibit unusual BPb change from 12 weeks of pregnancy through 10 years of age, our results cannot be attributed to the cohort's unique history of lead exposure.

Across a range of BPb from 1 to 32 μg/dL, these data show that half of the deleterious effects of lead on child IQ measured here occurred when third-trimester BPb increased from 1 to 6 μg/dL. When maternal BPb reached current Mexican and U.S. action limits for children and pregnant women (10 μg/dL), most of the adverse consequences on later child IQ associated with lead in the measured range had already occurred. If we continue to accept the current action limit, we also accept that most of the "damage" to the IQ of children associated with third-trimester lead exposure in our sample is permissible.

The fetal brain seems susceptible to lower lead concentrations than those established by the official Mexican standard and current CDC guidelines, and the effects are obvious at least until 10 years of age. Although these findings should be replicated, our data suggest that we should establish lower action limits for lead exposure of reproductively active women.

Appendix. Linear mixed models with random intercept and random slope for concurrent lead for a cohort of 128 children:[a] fixed-effects estimations.

Variable	Model A HOME and SES β ± SE (95% CI)	*p*-Value	Model B HOME without SES β ± SE (95% CI)	*p*-Value
Intercept	75.09 ± 12.84 (49.80 to 100.38)	< 0.0001	75.18 ± 12.76 (50.04 to 100.32)	< 0.0001
Ln(lead) 12–20 weeks	0.90 ± 1.640 (–2.34 to 4.12)	0.5864	0.88 ± 1.63 (–2.33 to 4.09)	0.5892
Ln(lead) 28–38 weeks	–4.15 ± 1.34 (–6.79 to –1.51)	0.0024	–4.14 ± 1.33 (–6.76 to –1.52)	0.0023
Mean ln(lead) 1–5 years	0.56 ± 2.22 (–3.81 to 4.93)	0.8013	0.61 ± 2.14 (–3.61 to 4.83)	0.7746
Ln(lead) 6–10 years	0.46 ± 0.85 (–1.21 to 2.13)	0.5907	0.46 ± 0.85 (–1.21 to 2.13)	0.5911
Child sex	–0.64 ± 1.83 (–4.25 to 2.97)	0.7270	–0.67 ± 1.80 (–4.22 to 2.88)	0.7109
Birth weight	0.00 ± 0.02 (–0.004 to 0.004)	0.9070	0.00023 ± 0.002 (–0.004, to 0.004)	0.9076
SES	–0.10 ± 0.86 (–2.59 to 0.79)	0.9170		
HOME scale	–0.16 ± 0.15 (–0.46 to 0.14)	0.3103	–0.16 ± 0.15 (–0.46 to 0.14)	0.2686
Maternal IQ	0.42 ± 0.08 (0.26 to 0.58)	< 0.0001	0.42 ± 0.07 (0.28 to 0.56)	< 0.0001
First FSIQ application indicator	–4.11 ± 0.45 (3.20 to 5.02)	< 0.0001	–4.11 ± 0.46 (–5.02 to –3.20)	< 0.0001

CI, confidence interval.
[a]Dependent variable is FSIQ of children from 6 to 10 years of age.

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AFFIDAVIT

COUNTY OF TIPTON)
)
STATE OF TENNESSEE)

Affiant Irene Thomas swears as follows:

1. I am an adult resident citizen of Drummond, Tipton County, Tennessee. I make the following statements based on personal knowledge.

2. My family and the Payne family were next door neighbors.

3. I have two sons, one is the same age as Pervis Payne, and the other is slightly older. These boys played ball and rode bikes together when they were growing up.

4. I knew that Pervis stuttered but he was around so much I was used to it.

5. I heard that they had to feed Pervis until he was about five years old. I heard that he would just sit at the table and wait for food to be put in his mouth.

Further the affiant saith naught.

Irene Thomas

Sworn to and subscribed before me on
This 18th day of July, 2017.

Notary Public

GAGE NEASE
STATE OF TENNESSEE
NOTARY PUBLIC
COUNTY OF DAVIDSON

My Commission Expires: 08/05/2020

Ex. H

DECLARATION

My name is Tyrasha Payne. I am an adult resident of Shelby County, Tennessee.

Pervis Payne is my older brother. Pervis is five years older than me.

When I was growing up, my mother gave special attention to Pervis. She told me that Pervis was born very premature and didn't develop normally until he was two years old.

I remember that my mother shopped for all of Pervis' clothes as he was growing up. Even as a teenager, when most boys were shopping for themselves, she continued to do his shopping. She also laid out his clothes for him to wear in the mornings.

I remember that Pervis was challenged in school. He just couldn't comprehend English or math, but did somewhat better in math than English. All through his school years, my mother was contantly meeting with his teachers about his poor academic performance.

I declare under penalty of perjury that the foregoing is true and correct.

Tyrasha P. Payne
8-18-10

AFFIDAVIT

COUNTY OF SHELBY)
)
STATE OF TENNESSEE)

Affiant Ruth Wakefield Johnson swears as follows:

1. I am an adult resident citizen of Memphis, Shelby County, Tennessee. I make the following statements based on personal knowledge.

2. I am older than Pervis Payne. We never dated, but became friends after Pervis stopped going to high school.

3. I always knew there was something wrong with Pervis. We would talk and he always gave me the impression of blankness, he'd just be staring at me.

4. Whatever girlfriend Pervis was dating determined what they would do. Pervis did not think for himself.

Further the affiant saith naught.

Ruth Wakefield Johnson.
Ruth Wakefield Johnson

Sworn to and subscribed before me on
This 15th day of July, 2017.

Gaye Nease
Notary Public

GAYE NEASE
STATE OF TENNESSEE NOTARY PUBLIC
COUNTY OF DAVIDSON

My Commission Expires: 05/05/2020

Ex. J

AFFIDAVIT

COUNTY OF SHELBY)
)
STATE OF TENNESSEE)

Affiant Zac Hayslett swears as follows:

1. I am an adult resident citizen of Memphis, Shelby County, Tennessee. I make the following statements based on personal knowledge.

2. I am currently the Minister of Music for the Greater Community Temple in Memphis, Tennessee.

3. Pervis Payne was my best friend when we were teenagers. We attended the same church, where Carl Payne, Pervis's father, was the pastor. I was the organist and Pervis was a spare drummer who played occasionally when the regular drummer was absent. Pervis could not follow a pattern or syncopation and a drum solo was out of the question.

4. Pervis was kinda slow. He wasn't as quick to learn as the rest of us. I remember vividly that it took Pervis longer to catch on to something or understand everyday situations. Sometimes he'd give up frustrated because he just couldn't learn.

5. I recall going to the store with Pervis and adding up what he wanted to purchase for him so he would know if he had enough money. He could add one or two items but if it went to double digits he could not add that in his head.

6. I remember that Pervis had trouble reading in Sunday school. Even when he was eighteen years old, he would stumble over words.

7. Even though I was younger than Pervis I had to explain different words to Pervis, he had a very limited vocabulary.

8. Pervis had no trouble driving to places he had been to before. However, finding new places was complicated for him. Pervis didn't know street names and he didn't understand maps. For example, if someone was giving Pervis directions that he was writing down, and he was told to turn onto Wright Street Pervis would write down "Rite" Street and then of course could not find the street.

Further the affiant saith naught.

Zacharias Haystett

GAYE NEASE
STATE OF TENNESSEE NOTARY PUBLIC
COUNTY OF DAVIDSON

Sworn to and subscribed before me on
This 13th day of August, 2017.

Gaye Nease
Notary Public

My Commission Expires: May 5, 2020

AFFIDAVIT

COUNTY OF TIPTON)
)
STATE OF TENNESSEE)

Affiant Everlina Flowers Sloan swears as follows:

1. I am an adult resident citizen of Brighton, TN., Tipton County, Tennessee. I make the following statements based on personal knowledge.

2. I am a teacher in the Tipton County Tennessee school system and had Pervis Payne in my Social Studies classes when he was in the 6th, 7th and 8th grades.

3. Pervis was very slow and had a hard time comprehending. I had to work one on one with him.

4. When Pervis took a test he invariably would fail. I would let him retake the test and sit and help him get the answers to the test. I would read the questions to him, and sometimes I would just have to give him the answers. Pervis still had problems even when I was working one on one with him and breaking it down to the 1st or 2nd grade level. Even then I would have to point out the answer.

5. Pervis's handwriting wasn't legible.

6. Pervis stuttered and depending on the circumstances his stutter would become more pronounced.

7. If the class was given instructions that had two steps, Pervis couldn't keep them in his mind. He might do the first step but then would ask "What did you say to do for the second part?"

8. Social Studies Class involves a lot of reading. I had the students read aloud. Pervis did not want to read. He didn't know all the words and wasn't comprehending what he read.

9. Pervis never volunteered to answer any questions in class. I often divided the student into groups and even though Pervis would be with the slowest group he still did not understand. The other kids were aware of his limitations.

10. Although Pervis was trying he could not get it. He would become frustrated because he could not understand. He needed to go back to basics and should have been placed in Special Education Classes.

Further the affiant saith naught.

Everlena Flowers Sloan

Everlina Flowers Sloan

Sworn to and subscribed before me on
This 8th day of May, 2017.

Gaye Nease

Notary Public

My Commission Expires: 5/5/2020

GAYE NEASE
STATE OF TENNESSEE NOTARY PUBLIC
COUNTY OF DAVIDSON

AFFIDAVIT

COUNTY OF TIPTON)
)
STATE OF TENNESSEE)

Affiant Sidney Thomas swears as follows:

1. I am an adult resident citizen of Atoka, Tipton County, Tennessee. I make the following statements based on personal knowledge.
2. I have known Pervis Payne all his life.
3. I worked a lot at the church along with Pervis and his dad, Pastor Carl Payne.
4. When his dad told him to do something such as go and pick up supplies, paint brushes, etc. His dad might have to tell him two or three times to make sure that Pervis understood.
5. When his dad gave Pervis instructions to pick up people to come to church he would remind Pervis about the time he had to pick them up and the time he had have them at the church. Pervis would say OK, but his dad would tell him again to make sure he got it.
6. Pervis stuttered a bit and when he got anxious and wanted to get a word out he would stutter more.
7. I believe that Pervis could be easily tricked by people. People took advantage of him, sometimes when you are kind people take advantage of you. A couple of times when Pervis was sent to pick up people for church someone along the way would ask him to drop someone off somewhere or pick up something at the store and bring it to them and he would be late getting to the church. It seems that Pervis was not able to think through a situation and see what the consequences might be.

Further the affiant saith naught.

Sidney Thomas Jr.
Sidney Thomas

Sworn to and subscribed before me on
This 7th day of May, 2017.

Gaye Nease
Notary Public

My Commission Expires: 5/5/2020

GAYE NEASE
STATE OF TENNESSEE NOTARY PUBLIC
COUNTY OF DAVIDSON

Ex. M

AFFIDAVIT

COUNTY OF TIPTON)
)
STATE OF TENNESSEE)

Affiant Vera Wherry swears as follows:

1. I am an adult resident citizen of Drummonds, Tipton County, Tennessee. I make the following statements based on personal knowledge.

2. My family and the Payne family lived in the same neighborhood, I am a little older than Previs but we rode the same school bus and attended the same church.

3. People would take advantage of Pervis. If there was anything you needed he would do it. At times people were using him to drive them here and there. Since Pervis worked with his dad, he had his own ride and money for gas.

Further the affiant saith naught.

Vera Wherry Hazlett
Vera Wherry

Sworn to and subscribed before me on
This 16th day of July, 2017.

Gaye Nease
Notary Public

GAYE NEASE
STATE OF TENNESSEE NOTARY PUBLIC
COUNTY OF DAVIDSON

My Commission Expires: 05/05/2020

Ex. N

DECLARATION

My name is Martha Fayne. I am an adult resident of Shelby County, Tennessee.

I have a Bachelor's degree and a Masters in Education. I am currently retired. I was employed at Munford High School in Tipton County, Tennessee. I began my employment there in 1968. I was a teacher and became a guidance counselor in 1983. I taught Pervis Payne in my science class during his tenth grade year.

In my opinion, Pervis Payne was intellectually disabled. Pervis was slow and had low comprehension. I remember having to give him individual help in order for him to pass the class. He didn't read well enough to understand the material on his own, and even when the material was explained to him, he had to be told over and over what to do. He couldn't retain instructions or information from one day to the next.

Pervis Payne's school records reflect that, although he attended school through the twelfth grade, he didn't graduate. The records indicate that he took the Tennessee Proficiency exam five times and failed each time, except for the math portion of one test he took in the ninth grade. This was unusual. A good student would typically take the exam once in the ninth grade and not need to take it again. Pervis Payne, however, took the test once a year from ninth grade through the eleventh, and twice during the twelfth grade and was still unable to pass, except for the math portion in the ninth grade. This, coupled with my memory of his learning problems, reflects a profound intellectual disability.

In my opinion, Pervis Payne's records indicate that he would have been eligible for resource classes for the educable mentally retarded. The records I have seen do not reflect that he was placed in resource classes, and may be incomplete. It is possible that his parents opted out of placing him in special education, as that was an option at the time.

I remember Pervis Payne as a pleasant, nice person who was never a disciplinary problem. He got along well with his fellow pupils as well as adults.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

Martha K. Fayne
8-17-10

AFFIDAVIT

COUNTY OF SHELBY)
)
STATE OF TENNESSEE)

Affiant Mary Williams swears as follows:

1. I am an adult resident citizen of Lakeland, Shelby County, Tennessee. I make the following statements based on personal knowledge.

2. I was a teacher in the Tipton County Tennessee school system and had Pervis Payne in my 9th grade English class.

3. Pervis Payne was a slow student. At the time when Pervis was in school, programs were not in place to identify and place students appropriately so they could receive all the help they needed.

4. I believe that Pervis had a resource English class as well as my English class. When this was the case the student would receive their grade through the resource class. When a student was in resource they were excused or omitted from some of the requirements. If they could show even some progress they would get a satisfactory grade.

5. Pervis was not a good reader. His comprehending and writing skills were very poor. His spelling was atrocious. He was a student who could never get it. He couldn't even memorize enough to pass a test. He just wasn't capable. He was just slow and smiling.

6. I my class, the students were required to a research and writing project. Pervis could not complete this assignment.

Further the affiant saith naught.

Mary Williams

Sworn to and subscribed before me on
This 28th day of June, 2017.

Gaye Nease
Notary Public

GAYE NEASE
STATE OF TENNESSEE NOTARY PUBLIC
SHELBY COUNTY OF DAVIDSON

My Commission Expires: 10/5/2020

Ex. P

AFFIDAVIT

COUNTY OF TIPTON)
)
STATE OF TENNESSEE)

Affiant, Denise Wakefield Giles, swears as follows:

1. I am an adult resident citizen of Drummonds, Tipton County, Tennessee. I make the following statements based on personal knowledge.

2. I lived in the same neighborhood as Pervis Payne when we were growing up and went to the same church where Pervis's father was the pastor.

3. We were in the same grade and in the same classroom from kindergarten through seventh grade. Pervis failed the seventh grade and I went on to the eighth grade while he repeated the seventh grade.

4. Pervis's parents worked all the time. I don't know when they would have had time to help Pervis with his homework. After school, Pervis would stay at his grandmother's house until his parents picked him up after work. His grandmother lived down the street from my house, so after school I helped Pervis with his homework.

5. In our school there was only one classroom for each grade. Within the grade, the students would be divided according to ability. I was one of the advanced students and Pervis was a remedial student.

6. Starting in the third grade, the teachers would ask me to help with the slower students. Pervis was always one of the students I would tutor.

7. In the third grade we were learning the multiplication tables. I tried to help Pervis learn how to multiply. I told him when you multiply by one the answer is always the number. Multiplying by two, five and ten I told him to use his fingers and count by two, five or ten. He could do tens up to one-hundred but when he got to ten times eleven or twelve, he was lost.

8. By the time we were in the seventh grade, I was taking Pervis and several other remedial students to a separate room where I tutored them. I would read a paragraph to them two times and then have them read the same paragraph. Even then, Pervis could not read the paragraph. He pointed to each word as he read and when he would get stuck I'd tell him to sound out the word. He wasn't able to sound out words. When Pervis was in the seventh grade, he was reading at the first or second grade level. He knew words like cat, dog, ear, and house but beyond that he had problems.

9. He couldn't spell. He was not able to understand when to use "ph" and when to use "f" or when a word started with a "k" or a "c".

10. When I questioned Pervis on the content of what I had read to him or what he had read, he never knew.

11. Pervis was way off on problem solving and remembering things. He had a hard time grasping even the simplest concept.

12. When we were going to have a test, the teacher had me go over the material with this group. Even then Pervis was not able to answer the questions on the test. Some of us students would hold up our paper and let Pervis copy our answers. Even though the teachers objected to cheating on tests they allowed Pervis to copy other student's answers. Even when copying he had trouble spelling the words correctly.

13. Pervis avoided reading. I never saw him reading and the teachers never asked Pervis questions or required him to read in class.

14. You could just forget trying to teach Pervis parts of speech. Subjects, verbs, prepositions and other parts of speech were beyond Pervis's ability. When I was tutoring the remedial students and asking them to diagram sentences, Pervis could never break down a sentence. It was too difficult for him, he just couldn't do it. He was never able to write a complex sentence.

15. When you study with someone you are able to see their limitations. I don't know how Pervis passed and was able to go on to high school.

16. After Pervis was in prison he wrote me some letters. The letters had fragmented sentences, run on sentences, and misspelled words. I had to work to try to make out what he was saying.

Further the affiant saith naught. Denise Giles

Sworn to and subscribed before me on

This 24th day of Sept, 2017.

Gaye Nease

Notary Public

GAYE NEASE
STATE OF TENNESSEE
NOTARY PUBLIC
DAVIDSON COUNTY, TENN.

My Commission Expires: 05/05/2020

AFFIDAVIT

COUNTY OF TIPTON)
)
STATE OF TENNESSEE)

Affiant John William Scott, swears as follows:

1. I am an adult resident citizen of Brighton, Tipton County, Tennessee. I make the following statements based on personal knowledge.

2. I am currently the Head Master at the Tipton Rosemark Academy, 8686 Rosemark Road, Millington, TN.

3. When Pervis Payne was in high school I was principal at the Munford High School in Mumford, TN. This high school was a new school which opened for the school year 1983-1984, combining two separate high schools into one new school.

4. Pervis had some learning difficulties.

5. He really struggled in English.

6. Pervis took the Tennessee Proficiency Test five time and still did not pass the reading, spelling and language sections. This test was based on 8th or 9th grade proficiency. However, Pervis could not pass it even when he was a senior in high school. He did not graduate from high school since he could not pass this test.

Further the affiant saith naught.

John W. Scott

John William Scott

GAYE NEASE
STATE OF TENNESSEE NOTARY PUBLIC
COUNTY OF DAVIDSON

Sworn to and subscribed before me on
This 8th day of May, 2017.

Gaye Nease

Notary Public
My Commission Expires: 5/5/2020

Ex. R

AFFIDAVIT

COUNTY OF TIPTON)
)
STATE OF TENNESSEE)

Affiant Mary Ella Payne swears as follows:

1. I am an adult resident citizen of Munford, Tipton County, Tennessee. I make the following statements based on personal knowledge.

2. I am a retired teacher. I taught the resource reading class from 1971-1982 at Drummond Elementary School. In addition, at the time, I was married to Charles Payne, Pervis's uncle.

3. Pervis Payne was in my reading resource class.

4. Pervis seemed to have difficulty in comprehending certain things. Some of his problem was reading and comprehending. Somewhere he missed his phonics and therefore it was so hard for him to comprehend how a word divided.

5. Sometimes I would speak to Pervis's parents and tell them Pervis needs to buckle down and work harder. They didn't really address any of the learning problems Pervis had at school. They were more concerned with his religious education than his school education.

6. When Pervis was in my resource reading class, and he was given something to do which had several steps, I had to keep reminding him of the steps.

7. He had a limited vocabulary.

Further the affiant saith naught.

Mary E. Payne
Mary Ella Payne

Sworn to and subscribed before me on
This 8th day of May, 2017.

Gaye Nease
Notary Public

GAYE NEASE
STATE OF TENNESSEE NOTARY PUBLIC
COUNTY OF DAVIDSON

My Commission Expires: 5/5/2020

Ex. S

AFFIDAVIT

COUNTY OF SHELBY)
)
STATE OF TENNESSEE)

Affiant Lovie Pryor swears as follows:

1. I am an adult resident citizen of Millington, Shelby County, Tennessee. I make the following statements based on personal knowledge.

2. I taught in the Title I special math program at the Drummonds Elementary School. This program was for students that were not able to work at grade level.

3. Pervis Payne was in my class.

4. Pervis was a challenged child. Language and the ability to reason were his biggest problems.

5. Pervis wasn't good in math but he did enough to pass. Students in the Title I program were given math problems they could solve even if this meant they were given first grade problems when they were in the eighth grade. Title I students were graded on their accomplishments in the special class not on being able to do grade level work.

6. Pervis could not do a word problem. He couldn't do reasoning.

7. He could never learn the multiplication tables.

8. Pervis had a very influential and well known family as his father was a preacher, because of this, teachers had sympathy for him and cut him some slack grading more favorably.

Further the affiant saith naught.

Lovie Pryor

Lovie Pryor

Sworn to and subscribed before me on
This 15th day of July, 2017.

Gaye Nease

Notary Public

GAYE NEASE
STATE OF TENNESSEE NOTARY PUBLIC
COUNTY OF DAVIDSON

My Commission Expires: 05/05/2020

AFFIDAVIT

COUNTY OF TIPTON)
)
STATE OF TENNESSEE)

Affiant Glenda Calhoun swears as follows:

1. I am an adult resident citizen of Munford, Tipton County, Tennessee. I make the following statements based on personal knowledge.

2. I taught Pervis Payne in the seventh grade.

3. He was poor in reading but he always tried hard.

4. Pervis went out for resource reading, which was a special program that gave extra help to a student having reading problems. When a child was having problems they would be referred to resource and then tested before being placed in the resource class. Being in resource reading allowed Pervis to have more time to take a test in any class.

5. Pervis had trouble with all content area subjects because he had problems in reading and comprehension.

Further the affiant saith naught.

Glenda Calhoun

Glenda Calhoun

GAYE NEASE
STATE OF TENNESSEE NOTARY PUBLIC
COUNTY OF DAVIDSON

Sworn to and subscribed before me on
This 16th day of July, 2017.

Gaye Nease

Notary Public

My Commission Expires: 05/05/2020

Ex. U

My name is Joseph Parker. I am an adult Resident of Haywood County, Tennessee.

I taught science and math at Munford High School from 1977 to 1985. In his 9th grade year, Pervis Payne was a student in my arithmetic class. That class was for students who were not proficient in math. These students needed individualized attention and instruction to grasp the concepts. Pervis failed the first six weeks, which intensified my focus on motivating Pervis to make an improvement. He ended up passing my class but I am extremely surprised that he passed the math portion of the Tennessee Proficiency Exam.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

Joseph Parker
August 16, 2010