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814 S.W.2d 593
STATE of Missouri, Respondent,
v.
Ralph E. DAVIS, Appellant.
No. 71694.
Supreme Court of Missouri,
En Banc.
July 23, 1991.
Rehearing Denied Sept. 10, 1991.

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Thomas R. Schlesinger, Clayton, for appellant.

William L. Webster, Atty. Gen., John M. Morris, Asst. Atty. Gen., Jefferson City, for respondent.

RENDLEN, Judge.

Found guilty of murder in the first degree and sentenced to death for slaying his wife, defendant's appeal falls within the ambit of the Court's exclusive appellate jurisdiction, Mo. Const. art. V, § 3, as well as the appeal from the denial of his Rule 29.15 motion seeking postconviction relief. In this consolidated proceeding both judgments are affirmed.

I. DIRECT APPEAL

Defendant first challenges the sufficiency of the evidence to support a conviction of murder in the first degree and, when examining this issue, we consider the evidence and all inferences reasonably drawn therefrom in a light most favorable to the jury's verdict, disregarding all contrary evidence and inferences. *State v. McDonald*, 661 S.W.2d 497, 500 (Mo. banc 1983), cert. denied. 471 U.S. 1009, 105 S.Ct. 1875, 85 L.Ed.2d 168 (1985). The unique circumstances of the case call for a detailed recital of the facts.

Susan Davis (Susan) and defendant met in Columbia during August, 1974, and were married in October, 1979. Prior to their marriage, Susan gave birth to the parties' son, Robbie, on August 3, 1978, and some time later they moved to a new home on Obermiller Road, immediately north of Columbia. In March, 1982, their second child, Angela, was born.

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Many witnesses testified that their relationship was one of affection and as parents they "worshipped" their children; further, though Defendant's two previous marriages had failed, he testified that his time with Susan was like "being in heaven." During the course of their marriage, the couple received substantial financial support including loans and gifts approximating \$100,000, from Susan's parents.

In late 1985 signs of marital discord appeared when Susan was employed through a temporary services company as a secretary to Westinghouse Corporation at the Columbia City Power Plant. Defendant began to suspect she was involved in an affair with a coworker and as their relationship deteriorated Susan filed an action for dissolution of marriage on November 14, 1985, which she dismissed two weeks later; it is not clear if defendant knew of this filing. Faced with the failing marriage but concerned for the family welfare Susan contacted their pastor in early May, 1986, asking him to come to their home to talk with defendant and specifically to collect defendant's firearms.

On May 16, the spouses engaged in a violent argument from which Susan suffered bruises to her arms and face. Following this incident she contacted local law enforcement officials and on May 21 filed formal charges against the defendant for third degree assault. When arrested, defendant posted a \$1,000 bond, was released and the matter set for hearing June 2. On that day, Susan filed a civil adult abuse action, pursuant to Chapter 455, RSMo, an ex parte order of protection issued restraining defendant from entering the home on Obermiller Road and Susan was awarded temporary custody of the children. That cause was also set for hearing June 2.

On May 21, Susan left home with the children in the family automobile (a red Ford Escort) and drove to her parent's home in Cedar Rapids, Iowa. Meanwhile, from the day the protective order issued until June 2, defendant violated the order by repeatedly returning to the home on Obermiller Road. While there, defendant acknowledged to a neighbor he knew he was violating the court's order but asked the neighbor not to call the police. He also told the neighbor that he believed Susan was having an affair and was involved in drugs. Venting his anger, defendant burst forth the threat that, "The only way to stop a whoring bitch like that is to shoot her." At that time defendant, in contrast to his usual neat appearance, was unkempt and disheveled and another friend who noted that defendant

appeared to be drinking heavily, was told by defendant that if Susan did not quit "messaging with him" he would "blow her away."

On June 2, Susan drove a rental car from Cedar Rapids for the criminal and the adult abuse hearings. Though the criminal matter was continued, in the adult abuse proceeding an order issued restraining defendant for 180 days from molesting Susan and from entering the dwelling on Obermiller Road. Susan returned to Cedar Rapids that night.

On June 5, defendant contacted the couple's pastor and requested the return of his firearms as the hunting season was approaching. Also that day, Susan drove to Columbia in the red Ford Escort to return to work and though she left the children in Iowa she brought with her a newly acquired German Shepherd dog. Visiting her next door neighbor she learned that defendant had continuously violated the court's order by entering the home, and as they were talking, defendant appeared. Susan attempted to leave but defendant grabbed her by the wrist and forcibly took her car keys and told her he wanted to talk. The neighbor informed defendant he was going to call the police and went into his home to do so. As he dialed 911, the defendant entered the home and grabbed the phone and slammed it down but then left the house. Susan contacted the local law enforcement officials who searched her home and surrounding area finding the keys to the Escort on the neighbor's garage floor. Later that evening after Susan had gone, defendant and the couple's pastor returned to the neighbor's home. Defendant stated he had no money and no place to live and it was decided that defendant would turn himself in to the authorities the next day.

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At that time he borrowed \$100 from the neighbor, apparently for immediate expenses.

The next day, Susan filed new criminal charges against the defendant for third degree assault and for violation of the protective order. Defendant was again arrested and released on bond and was further ordered not to have any contact with his wife. The same day, a *capias* warrant was issued for defendant's violation of the condition of the prior bond, but this warrant was not executed until June 10.

On the weekend of June 7 and 8, Susan and a friend changed the locks on the doors of the house on Obermiller Road and installed a series of anti-burglary devices. When she returned to Missouri, Susan had spent her first night at a women's shelter and the next at a local hotel; however, on the 8th she resumed living in the Obermiller Road residence, and on June 9 went to work at the power plant. During this period, defendant had purchased a 12-gauge shotgun and ammunition from a local sporting goods store. On the evening of June 9, at about 6:15 p.m. Susan left the plant in her Escort remarking to a coworker that she intended to drive straight home. That was the last time Susan Davis was ever seen. A friend who called Susan's home a few hours later received no answer.

About noon on June 10th, defendant drove the Escort from Columbia to Jefferson City using the back roads to avoid being seen. He drove the car to a rental storage facility called Apache U-Store-It west of Jefferson City and told the attendant he needed a rental space large enough to store an automobile. Defendant, sweating profusely and complaining he was sick, told the attendant that he was storing the car because he feared he might lose it in a divorce proceeding. After securing the rental unit, the defendant went to a local store where he purchased a lock for the unit and two air fresheners which he placed in the Escort. He also used the phone at the rental facility to contact a local cab company and when the cab arrived he instructed the driver to take him to Columbia but had only enough money to reach Ashland, a town 15 miles south of Columbia. During the drive, defendant appeared quite agitated and telling the driver a similar story, stated he had stored the Escort to avoid losing it in the divorce.

On June 11, responding to calls that Susan was missing, local law enforcement officials searched the home on Obermiller Road. Gaining entry, they found the dog closed in the garage with dog food and feces scattered on the floor and the house appeared as if someone had just stepped out, with a copy of TV Guide in the living room turned to June 8. The police also found several recently filled prescription bottles, one a prescription for the drug Tetracycline.

Also on that day, defendant filed for dissolution of marriage and on June 14, drove to Cedar Rapids where with help from local law enforcement officials he secured the custody of the two children from Susan's parents. Returning to Columbia, defendant moved back into the home on Obermiller Road again in violation of the protective order, but as a result of Susan's disappearance, the three charges pending against defendant were eventually dismissed. Further after service by publication, a default divorce was granted awarding defendant custody of the children and ordering Susan to pay child support.

In mid-June and late July, defendant apparently forged three checks on Susan's personal account totaling nine hundred dollars. Two were honored by the bank reducing the balance of Susan's account to less than two dollars, and during this time, defendant forged her signature to a change of beneficiary form on defendant's policy of life insurance.

In the twenty months following, defendant spun a web of lies to cover the whereabouts of the Escort and his wife. When asked by the police, friends or relatives, defendant routinely stated he did not know where the Escort was and asserted he believed his wife had "run off" to Texas in the Escort to get a job at the Westinghouse Corporation's headquarters to be with her alleged lover. Not once during this period did defendant inform the police or relatives

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the true whereabouts of the car. To lend credence to this deception he directed an employee of his insurance office to search for the Escort in the Columbia area.

In January, 1988, defendant received notice he was several months delinquent on rental payments for the storage unit at Apache U-Store-It, but incredibly ignored the notice. On March 7, 1988, employees of U-Store-It with representatives from the sheriff's office opened the storage unit to confiscate its contents. The officers discovered the Escort that Susan had last been seen driving from the city power plant on June 9, 1986.

The vehicle, as immediate observation and latter laboratory tests confirmed, was the scene of a grisly crime. The driver's side window had been broken out and the windshield cracked where it appeared the rearview mirror had struck it. The floorboards both front and back, the seats, dashboard, interior doors and ceiling were coated with dried blood and material later identified as human tissue. Also on the floorboards were broken glass and human bone fragments identified at trial as having come from the skull of a person who had recently used the drug Tetracycline. At trial, expert testimony established that various smudges found on the bone fragments were composed of lead and antimony, a composition commonly found in shotgun pellets. Among the debris on the floor and seats were a number of shotgun pellets of the same composition as that found in the smudge on the skull bone fragments. The detailed examination of the car revealed various swirls in the dried blood and human tissue indicating that someone had attempted to wipe up the human liquids when those substances were fresh. Though Susan's body has never been discovered, an expert opined at trial that the interior of the Escort was the scene of her death.

Learning to whom the storage unit was rented, the police contacted defendant on March 10 and without revealing that they had the Ford Escort in their possession, questioned him concerning his wife's disappearance. During this interview defendant related the following version of the "facts". He claimed he had not seen Susan or the car since June 5, 1986, when he had encountered her at the neighbor's house. The police then informed defendant they had found the vehicle where he had stored it, whereupon defendant changed his story relating quite a different version of the facts, asserting that on the day Susan disappeared, she stopped by his place of business and told him she "was getting out". Defendant grabbed the car keys from Susan, she pulled a gun on him and he got into the car to drive away. When asked about the blood in the car, defendant claimed that Susan began to beat on the window with the gun as defendant drove away and in the process smashed the window running her hand through it and cutting her arm severely, and defendant drove away never to see Susan again. Understandably, the police placed defendant under arrest.

Searches of defendant's business and the house on Obermiller Road revealed more incriminating evidence. In his desk officers discovered Susan's diamond ring from a previous marriage, which witnesses testified Susan always wore, in an envelope. At the couple's home officers discovered the 12-gauge shotgun which defendant had purchased on June 9, 1986, the last day Susan was seen alive and later tests revealed the shotgun had been fired.

With this evidence at hand, defendant was charged by information on January 10, 1989, with first degree murder and armed criminal action 1. Though the trial transcript contains five volumes and more than 150 exhibits were offered, probably the most damning evidence came from defendant's testimony during direct and cross-examinations. He admitted having lied to neighbors, friends, relatives and the police concerning Susan's disappearance but asserted on the stand that for the first time during this three-year period, he would

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"come clean" and tell what really happened, insisting that his current version of the events was finally the truth. A recital of defendant's final version was at best suspect and the effect of both direct and cross-examination was to destroy any remaining vestige of credibility. Deliberating for only two hours, the jury found defendant guilty of first degree murder and in the penalty phase assessed punishment at death.

We hold that there was sufficient evidence to have submitted the cause to the jury and to support the finding that beyond a reasonable doubt defendant killed Susan Davis in the manner charged.

On August 31, 1989, defendant filed his pro se Rule 29.15 motion seeking postconviction relief and on October 30, an amended motion was filed. It was noted by the State that this motion was not verified by the defendant and additional time was granted defendant for submission of a proper amended motion but no amendment was filed. On

May 11, 1990, an evidentiary hearing was conducted before the Honorable Frank Conley, who entering his findings of fact and conclusions of law on July 31, denied defendant's motion. This consolidated appeal followed.

Defendant next raises a question which is a matter of first impression in Missouri though it has garnered much attention in other jurisdictions. Defendant objects to the State's introduction of evidence regarding "DNA fingerprinting" 2 as proof that the blood found in the Ford Escort was that of Susan Davis.

A. General Information Concerning DNA

DNA is the common abbreviation for deoxyribonucleic acid whose structure, the famous "double helix", was discovered in the early 1950's by James Watson and Francis Crick. Most human cells contain a nucleus which in turn contains 46 chromosomes that arrange themselves into pairs. Tightly coiled and packaged within these chromosomes are DNA strands consisting of two strands of nucleotides running in opposite directions. The double helix strands of DNA are connected by hydrogen bonds between bases. There are only four varieties of bases (Adenine, Thymine, Guanine and Cytosine, which are more commonly referred to as A, T, G, C) and these form only two varieties of pairs (A and T, G and C).

A gene is a segment of DNA that determines physical characteristic such as hair and eye color as well as genetic defects such as Huntington's disease. There is also a certain quantity of DNA which apparently provides no code for characteristics and this is referred to as "space" or "junk" DNA. A DNA molecule contains more than 3 billion units and although a human receives half of his DNA composition from his mother and half from his father, the final links of DNA are unique to each individual. 3

B. The DNA "Fingerprinting"

The DNA fingerprinting process employed by Cellmark involves six steps:

1) Extraction. The DNA is chemically extracted from the blood sample and purified to obtain a high molecular DNA.

2) Fragmentation. The DNA molecule, too large to deal with as a single unit, is then cut into fragments by a restricting enzyme which, depending upon the enzyme selected, cuts the DNA fragment precisely at a designated point.

3) Electrophoresis. The DNA fragments are then placed in an agarose gel between two electrically charged poles which assist in separating the fragments by size, the smaller fragments moving more readily through the gel than the large. The end result is an orderly pattern of the fragments in parallel lines.

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4) Southern Blotting. Named for Dr. Ed Southern who pioneered the process in the mid-1970's, the DNA band pattern in the agarose gel is then transferred to a nylon membrane which resembles a sheet of heavy blotting paper. During this process, the DNA strands are "unzipped" from one another at their base pairings.

5) Hybridization. Radioactive tagged probes, which are small DNA fragments developed in the laboratory, are then introduced onto the nylon membrane. The probes locate and attach themselves to recognized complementary base sequences, in essence "zipping" back parts of the DNA fragments.

6) Autoradiograph. The excess probes are washed away and the nylon membrane is then placed next to a sheet of x-ray film and exposed for several days. The end product is a series of dark parallel bands resembling the Universal Bar Codes on labels commonly found in retail stores to identify stacks of merchandise. The result is known as an autoradiograph or commonly an autorad. This then is the DNA fingerprint.

C. Analysis

As the body of Susan Davis has never been found, the principal physical evidence of her death produced by the State was the dried blood smears and bone fragments found in the interior of the Ford Escort. Prior to trial, the State sent samples of the dried blood to Cellmark Diagnostics (Cellmark), a private corporation which performs routinely "DNA fingerprinting" analysis, for testing. 4 Armed with the results of those tests, the State arranged for testimony of Dr. Daniel Garner, director of laboratories at Cellmark, who would describe the testing and interpret the results.

On the morning of the second day of trial, a hearing was conducted in compliance with the teaching of *Frye v. United States*, 293 F. 1013 (D.C.Cir.1923), to determine the admissibility of the Cellmark lab results and the testimony of Dr. Garner. At the hearing, Dr. Garner testified to the acceptance of "DNA fingerprinting" by the scientific community and described the processes employed by Cellmark in its laboratories which mirror the process described above. Although Dr. Garner did not personally oversee the testing he reviewed the data and made the final interpretation of the results.

In sum Dr. Garner testified to the following: His laboratory had received two separate unknown samples of dried blood taken from the interior of the Escort, a sample of blood from defendant, and separate samples from Robbie and Angela Davis, the parties' natural children. Extracting DNA molecule fragments from each sample and performing the previously described procedures, lab technicians at Cellmark obtained autoradiographs of the five

samples. Based upon comparisons between the two unknown samples and defendant's to the two children's DNA fingerprints it was a scientific certainty that the two previously unknown samples came from the mother of Robbie and Angela Davis. At trial, Dr. Garner described the certainty of the conclusions in these terms: It was 510 times more likely that the two blood samples came from the mother of Robbie Davis and 190,000 times more likely that the blood samples were from the mother of Angela Davis. Expressed in percentages it was a 99.99+ chance that the blood samples came from the mother of Robbie and a 99.9999+ chance that the blood samples came from the mother of Angela.

Measuring this information against the Frye test, the court found that DNA fingerprinting has gained general acceptance within the scientific community and determined to allow the State's evidence regarding the DNA fingerprinting conducted by Cellmark. At trial, Dr. Garner testified to the same matters and the autorads were introduced in evidence.

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Defendant attacks the trial judge's decision to allow the evidence of DNA fingerprinting, asserting that the reliability of the procedures used by Cellmark were not sufficiently established to justify admission.

The long accepted standard for admissibility of results of scientific procedures enunciated in *Frye v. United States*, requires that such may be admitted only if the procedure is "sufficiently established to have gained general acceptance in the particular field in which it belongs." *Id.* at 1014. This principle has been adopted and regularly applied in a variety of Missouri decisions. *State v. Stout*, 478 S.W.2d 368, 369 (Mo.1972); See *State v. Price*, 731 S.W.2d 287, 291 (Mo.App.1987); *State v. Moore*, 690 S.W.2d 453, 457 (Mo.App.1985) (enzyme testing); *State v. Young*, 668 S.W.2d 263, 266 (Mo.App.1984) (semen analysis test); *State v. Smith*, 637 S.W.2d 232, 237 (Mo.App.1982) (neutron activation analysis for human hair and synthetic fibers); *State v. Sager*, 600 S.W.2d 541, 573 (Mo.App.1980), cert. denied 450 U.S. 910, 101 S.Ct. 1348, 67 L.Ed.2d 334 (1981) (science of positive bite mark identification); *State v. Major*, 564 S.W.2d 79, 82 (Mo.App.1978) (neutron activation analysis for gunshot residue). In the same vein, our courts have employed the Frye standard to exclude certain evidence, a noteworthy example involves the results from polygraph or "lie detector" tests. *State v. Mahany*, 748 S.W.2d 762, 764 (Mo.App.1988) (inadmissible because such tests are not "uniformly sanctioned by the scientific community").

The Frye standard allows the law to progress in cadence with the developments in the natural sciences. Though a scientific procedure may be disallowed as evidence at a given point, this does not forever preclude admissibility, if at a later time it attains general acceptance and recognized reliability in the scientific community. As discussed in *State v. Stout*, certain scientific processes are inadmissible because the process is too new to obtain current acceptance within the scientific world but with the passage of time such process may gain general acceptance. *Id.*, 478 S.W.2d at 372 (Court ruled inadmissible neutron activation analysis of blood because the technique had not then been generally accepted.).

In determining whether a specific procedure has gained acceptance within the scientific community, our courts frequently look for guidance in the decisions of other jurisdictions, as well as professional literature and surveys of the history of the process involved. *State v. Sager*, 600 S.W.2d at 569-572; *State v. Moore*, 690 S.W.2d at 457.

"DNA fingerprinting", the process Cellmark employs, was developed by Dr. A.J. Jeffreys of Leicester University in Great Britain in 1985. Comment, *DNA Fingerprinting and Its Impact Upon Criminal Law*, 41 Mercer L.Rev. 1453, 1454 (1989). Soon thereafter Jeffreys and his staff using these techniques assisted British law enforcement officials in determining the identity of a murder-rapist. *Id.*

The first appellate court to address the admissibility of DNA fingerprinting evidence in America was a Florida court in *Andrews v. State*, 533 So.2d 841 (Fla.Dist.Ct.App.1988) though such evidence had been successfully introduced in a number of trial courts. The Andrews court, rejecting the Frye test, relied instead upon a "relevancy/reliability approach" adopted by a number of federal courts to determine admissibility. *Id.* at 847. Approving the admission of such evidence the court looked to other uses where DNA had been reliably employed, the testing company's safety procedures and the reception in the genetics field to such testing concluding that "evidence derived from DNA print identification appears based upon proven scientific principles." *Id.* at 850.

Since Andrews, several states have addressed this issue and as might be expected are not unanimous on the choice of tests for determining admissibility nor on the ultimate issue of admissibility of DNA fingerprinting. A number of states have, like Florida, rejected the Frye standard either in whole or in part opting for more relaxed standards. In many, DNA fingerprinting, and specifically testings performed by Cellmark,

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has been held admissible. *State v. Pennell*, 584 A.2d 513, 519 (Del.Super.Ct.1989) (Cellmark performing the testing); *State v. Brown*, 470 N.W.2d 30 (Iowa 1991); *State v. Pennington*, 327 N.C. 89, 393 S.E.2d 847, 854 (1990)

(Cellmark performing the testing); *State v. Blair*, (Ohio Ct.App.1990) (1990 WL 212664) (Cellmark performing the testing); *State v. Ford*, 392 S.E.2d 781, 784 (S.C.1990); *Spencer v. Commonwealth*, 238 Va. 275, 384 S.E.2d 775, 781 (1989), cert. denied 493 U.S. 1036, 110 S.Ct. 759, 107 L.Ed.2d 775 (1989); *State v. Woodall*, 385 S.E.2d 253, 259 (W.Va.1989).

In those states which like ours have continued to apply the Frye standard to determine admissibility, DNA fingerprinting has generally met with favorable responses. *Snowden v. State*, 574 So.2d 960, 966 (Ala.Crim.App.1990); *Smith v. Deppish*, 248 Kan. 217, 807 P.2d 144, 159 (1991); *State v. Schwartz*, 447 N.W.2d 422, 426 (Minn.1989) (Cellmark performed the testing); *Glover v. State*, 787 S.W.2d 544, 547 (Tex.Ct.App.1990).

At least two other states appear heading toward acceptance of such proof. *Hinton v. Commissioner of Corrections*, (Conn.Super.Ct.1990) (1990 WL 269448); *State v. Thomas*, 245 N.J.Super. 428, 586 A.2d 250, 253 (App.Div.1991) and in at least one instance the admissibility of the results of such tests has been ordained by legislative enactment. La.R.S. § 15:441.1 (Supp.1989).

This is not to say that the process has received universal favorable acceptance. Among the first to question the admissibility of DNA fingerprinting was New York. In *People v. Wesley*, 140 Misc.2d 306, 533 N.Y.S.2d 643 (Co.Ct.1988), the Albany County Court holding that although DNA fingerprinting was "reliable and has gained general acceptance in the scientific community" thus satisfying the Frye requirements, nonetheless ordered the prosecution to adjust Lifecodes' mean power of identity statistics to comport with testimony at the pretrial hearing and questioned the initial figures provided by Lifecodes' expert's testimony. *Id.*, 533 N.Y.S.2d at 659.

Another New York case dealing with the subject was *People v. Castro*, 144 Misc.2d 956, 545 N.Y.S.2d 985 (Sup.Ct.1989). As in *Wesley*, the court held that DNA identification had met the admissibility standard under Frye yet excluded from evidence certain portions of Lifecodes' testimony. *Id.*, 545 N.Y.S.2d at 999. The court ordered a pretrial hearing on the issue of DNA identification and Lifecodes' processes and procedures and at the conclusion of a 12 week hearing, held that Lifecodes' conclusions to the effect that two DNA samples did not match was admissible because the process was reliable and accepted by the scientific community. *Id.* at 995. However, the court concluded that Lifecodes' testimony as to a match between two DNA samples was not reliable since Lifecodes failed to perform proper "recognized scientific procedures" in attempting to explain the bands on the autorads. *Id.*, 545 N.Y.S.2d at 997.

In *State v. Schwartz*, *supra*, the Supreme Court of Minnesota although recognizing under Frye the generally acceptability of DNA identification nonetheless excluded evidence of test results conducted by Cellmark. *Id.*, 447 N.W.2d at 426-427. The court found that Cellmark failed to comply with FBI laboratory "validation protocols" and refused to allow the defense full access to Cellmark's testing data and results thus certain of their results could not be found reliable and were excluded. *Id.*, 447 N.W.2d at 428.

Probably the harshest criticism of Cellmark and its testing procedures comes from Massachusetts in *Commonwealth v. Curnin*, 409 Mass. 218, 565 N.E.2d 440 (1991). In that case, the court declined to discuss the general admissibility of DNA identification test results focusing instead upon the procedures employed by Cellmark for reaching its mean power of identity statistics. *Id.* 565 N.E.2d at 442. Rejecting the test results the court looked to testimony from the pretrial hearing where even the expert witness from Cellmark conceded the possible unacceptability of its processes. *Id.* at 443. The court could find nothing in the prosecution's evidence

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demonstrating that Cellmark's database used to compare with the test results is adequate because at the pretrial hearing the experts were unable to agree as to the required population studies, the minimum number of humans (persons) to be sampled and the level of ethnic information required. *Id.* at 444. However, the opinion levels no criticism toward the underlying concept of DNA fingerprinting.

Our research has disclosed no case, and none has been suggested, that rules DNA identification inadmissible *per se*, rather, they have acknowledged the basic principles are generally accepted in the scientific community, and only the reliability of statistical means utilized to derive a numerical power of identity has been questioned.

Federal courts have lagged behind the states in these matters. We have found only four federal decisions which have currently addressed this issue, of those, the most detailed discussion appears in *United States v. Two Bulls*, 918 F.2d 56 (8th Cir.1990). The circuit court opined that whether proceeding under Federal Rules of Evidence or under Frye, the basic requirements are the same, *Id.*, 918 F.2d at 60, holding that the district court in deciding admissibility must determine as a matter of law:

(1) whether the DNA evidence is scientifically acceptable, (2) whether there are certain standard procedures that should be followed in conducting these tests, and (3) whether these standards were followed ...

Id., 918 F.2d at 61. The court declined to decide the admissibility of DNA identification test results but remanded for the trial court to rule the matter under the standards prescribed. *Id.*

Under the dictates of *Two Bulls*, the North Dakota federal district court ruled the government had carried its burden of showing DNA fingerprinting was generally accepted by the scientific community, that laboratory testing was properly performed and accordingly admitted Cellmark's statistical evidence as to DNA sample matches. *United States v. Young*, 754 F.Supp. 739, 741-742 (D.S.D.1990). Cellmark's lab technicians testified at the pretrial hearing as to safety protocols and the general nature of DNA fingerprinting employed in their testing while the defendant offered no evidence to refute the government's showing. *Id.*

Near the time *Two Bulls* was heard in the Eighth Circuit, the federal district court in Vermont dealt with the issue. The court in *United States v. Jakobetz*, 747 F.Supp. 250 (D.Vt.1990), held that under a balancing test, DNA fingerprinting was admissible because the RFLP process was reliable as was the genotype frequency numbers espoused by the tester. Further, in evaluating DNA fingerprinting against Federal Rule of Evidence 403, the court found that such evidence was not unfairly prejudicial or misleading as the jury members could compare the bands on an autorad. *Id.*, 747 F.Supp. at 263. See also *United States v. Yee*, 134 F.R.D. 161 (N.D.Ohio 1991) in which the district court held the government met its burden demonstrating the procedures and tests performed by the FBI in its DNA identification process were reliable and were generally accepted in the scientific community. *Id.*, 134 F.R.D. at 167.

Finally a review of current literature, of which there is no paucity, makes clear the underlying process of DNA identification is well accepted in the scientific community though several authors voice concerns as to procedures employed by the testers, namely the three private companies dominating the field. See Thompson and Ford, *DNA Typing: Acceptance and Weight of the New Genetic Identification Tests*, 75 Va.L.Rev. 45 (February 1989) and Gianelli and Imwinkelreid, *Scientific Evidence*, § 17-8(E) Cum.Supp.1990.

In this case, at the Frye pretrial hearing Dr. Garner, the only witness called, testified the concept of DNA fingerprinting was generally accepted in the scientific community and no contrary evidence was offered to refute his position. Garner further testified the RFLP process employed by Cellmark was generally accepted and again no evidence appears to contradict this conclusion. Nothing in the record or

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from literature on the subject persuades us that the theory of DNA fingerprinting is not generally accepted in the scientific community.

Defendant however attacks the trial court's ruling, contending that the reliability of Cellmark's testing had not been established. Specifically, defendant points to the fact that Dr. Garner did not perform the tests himself and was thus incompetent to testify to the nature and efficacy of those tests. Further at the Frye hearing Garner did not sufficiently explain his basis for his power of identity figures.

Defendant concedes "the scientific theory underlying DNA typing is not controversial" and thus his argument concerning the manner in which the tests were conducted goes more to the credibility of the witness and the weight of the evidence, which is in the first instance a discretionary call for the trial court and ultimately for the jury. *State v. Endicott*, 732 S.W.2d 239, 242 (Mo.App.1987); *State v. Moore*, 690 S.W.2d 453, 457 (Mo.App.1985). It is within the trial court's sound discretion to admit or exclude an expert's testimony, *State v. Taylor*, 663 S.W.2d 235, 239 (Mo. banc 1984), and no abuse of discretion has been demonstrated.

II. MOTION FOR POSTCONVICTION RELIEF

The sole point on appeal from denial of his Rule 29.15 motion are three instances demonstrating ineffective assistance of trial counsel allegedly rising to a level requiring a new trial.

The facts surrounding defendant's postconviction motion are these: On August 31, 1989, defendant filed his pro se Rule 29.15 motion and on September 22, was granted a thirty day extension within which to file an amended motion. On October 30, 1989, defendant's counsel filed an amended motion referencing the three alleged deficiencies of trial counsel which we shall presently address. This motion was neither signed nor verified by defendant. Defendant's counsel also requested a second extension of thirty days, which though not permitted by the rules was granted by the court. The state on December 6, filed a motion to dismiss defendant's motion for failure to comply with Rule 29.15 or in the alternative have defendant file a more definite statement as to his allegations and verify and sign such. The court sustained the motion for a more definite statement but withheld ruling at that time on the motion to dismiss. After evidentiary hearing, the court ruled against defendant on the merits and then held that defendant's cause should be dismissed on the basis of procedural default for failure to comply with the verification requirement.

This Court has repeatedly held that the verification requirements of Rule 29.15 are mandatory and jurisdictional. *Malone v. State*, 798 S.W.2d 149, 151 (Mo. banc 1990). Rule 29.15(f) provides that "[a]ny amended motion shall be verified by movant." No statement could be clearer. Though the court did not err in ruling that defendant's amended motion was procedurally defective, because the court's jurisdiction was invoked by the original

motion we examine for plain error. Our review is ordinarily limited to determining whether the findings, conclusions, and order of the court are clearly erroneous, Rule 29.15(j), and under the plain error rule whether manifest injustice has occurred. To establish an allegation of ineffective assistance of counsel, defendant must demonstrate counsel's conduct was not only deficient but that this deficiency resulted in prejudice to movant's case. *Sanders v. State*, 738 S.W.2d 856, 857 (Mo. banc 1987). This is a heavy burden and trial counsel, afforded broad latitude as to questions of trial strategy, is not to be judged ineffective constitutionally simply because in retrospect such a decision may seem an error in judgment. *Morrow v. State*, 782 S.W.2d 788, 790 (Mo.App.1989).

Specifically defendant alleges trial counsel was ineffective for not obtaining expert witnesses to challenge the reliability of Cellmark's DNA testing procedures. When a movant claims ineffective assistance of counsel for failure to locate and present expert witnesses, he must show

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that such experts existed at the time of trial, that they could have been located through reasonable investigation, and that the testimony of these witnesses would have benefited movant's defense. See *Childress-Bey v. State*, 779 S.W.2d 697, 699 (Mo.App.1989); *Williams v. State*, 782 S.W.2d 685, 686 (Mo.App.1989). Defendant fails to name or suggest an expert who could have testified on his behalf at trial and indeed as noted above every jurisdiction which has dealt with DNA fingerprinting has essentially accepted the validity of the scientific principals involved. Most importantly, defendant's trial counsel did indeed arrange for separate, independent testing with Lifecodes, the nation's other major private DNA identification laboratory, and the results from that test (which defendant did not offer during trial) were consistent with those of Cellmark. No deficiency in counsel's performance is apparent here.

Defendant's second allegation of ineffectiveness is that trial counsel failed to locate and present an expert witness who could testify to the nature of a "trust" and explain clearly to the jury that defendant could not have gained access to Susan's parent's trust. This point is meritless. Even if an expert could have been presented and so state, such testimony would have provided small comfort to defendant's cause. The trust in question with a corpus of \$1.1 million, had as its beneficiaries, Susan and her brother and in the event of Susan's death, her share devolved to her children, Robbie and Angela. The state argued that defendant could reasonably believe that as the children's sole surviving parent he could in some manner exercise control over the proceeds of the trust once paid to his children for as previously noted, after killing his wife defendant obtained a decree of dissolution and an order awarding him custody of the children. A trust expert would have done little to dispel the effect of this testimony. This contention is denied.

Defendant's third allegation concerns trial counsel's "slip of the tongue" during the closing argument in the penalty phase of trial. On a number of occasions, trial counsel averred that defendant had killed Susan in an act of passion without prefacing his comments that he was not admitting the guilt of his client. Defendant states that this allowed the jury to believe that even his own attorney believed he was a liar. Trial counsel conceded that the statements were inadvertent but that he also realized the jury had found defendant guilty in the guilt phase of this bifurcated trial and had deliberated for only two hours on that issue. Defendant's credibility had been laid waste by his admissions of having lied to the police, his relatives and neighbors concerning his actions since his wife's disappearance and the collapse of his alibi during cross examination in which his story was stripped of any remaining plausibility. Trial counsel explained "the jury was going to be extremely offended if I got up and continued to maintain [defendant's] innocence" in light of what had transpired. We find no ineffectiveness of trial counsel in these matters nor can it be said that prejudice sufficient to warrant reversal resulted from the statements of counsel and most certainly none of defendant's contentions approaches the level of plain error.

III. INDEPENDENT REVIEW

Finally we conduct our independent review of the death sentence pursuant to § 565.035.3, RSMo 1986. First we hold the evidence amply supports the two aggravating circumstances found by the jury during the penalty phase of the trial, warranting the punishment of death. Those aggravating circumstances statutorily allowed under § 565.032.2(4) and (12), RSMo 1986 were:

- 1) That defendant murdered Susan Davis for the purpose of the defendant receiving money or any other thing of monetary value from Susan Davis or another;
- 2) The defendant murdered Susan Davis because she was a witness in a pending prosecution of the defendant for the offense of assault in the third degree and violation of an order of protection.

As to the first, days before Susan was murdered, defendant confided that he

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was financially strapped and borrowed \$100 from his neighbor. He was living out of the insurance office and his company was experiencing financial lows. His tax returns for 1986 reveal an income of only \$3,359. There is little question that immediately prior to Susan's death, defendant was in need of money.

After Susan's disappearance, defendant came into possession and took actions to obtain Susan's belongings and other items of value including her diamond ring from a previous marriage. The record shows that Susan habitually wore this ring and was wearing it shortly before her disappearance. After the Ford Escort had been discovered in the storage unit in 1988, the police conducted a search of defendant's office and discovered the ring in a small stapled envelope in defendant's desk. Defendant's explanation for the ring conflicted sharply with the state's evidence. Defendant testified the ring was actually the engagement ring he had given Susan and that just prior to her disappearance Susan had given him the ring when he picked up some of his belongings from his home. The jury, as it was entitled to do, apparently rejected this implausible story.

The next item concerns Susan's personal checking account. Defendant was not a signatory to that account and immediately prior to Susan's disappearance, the balance in Susan's account was just over \$500. About one week after Susan's disappearance, the bank rejected a check for \$400 written on Susan's account because the signature on the check did not match those on file with the bank. Thereafter, two more checks were written on Susan's account in July, both of which were honored by the bank reducing the balance of her account to \$1.82. Although these later checks bore the apparent signature of Susan Davis, it was established at trial that they had been forged. Although there was no direct testimony at trial demonstrating that defendant himself forged the checks, coupled with the other evidence at trial, a strong inference could be drawn from which the jury could determine that it was defendant who forged the checks and the checking account.

The third item concerned the two trusts established by Susan's parents in Iowa. The trusts as briefly hereinbefore discussed were established for the benefit of the parents during their lives and at their deaths the remainder would be paid to Susan and her brother as beneficiaries. In the event of Susan's death, her share of the proceeds would be paid to Susan's two children, Robbie and Angela. At no time would the trust proceeds ever be paid directly to defendant. Testimony at trial revealed that defendant knew of these trusts and their terms and his protests to the contrary are not credible. Defendant's argument that because Susan and her children were beneficiaries of the trust, he would derive no benefit from Susan's death ignores his status as father of the children. At the time of Susan's death, it was apparent the marriage had failed and that Susan intended to obtain custody of the children. If Susan were somehow removed from the scene, defendant would be the sole parent and as such could exercise a degree of control over his children and their property. See generally § 475.025, RSMo 1986; *Kubatzky v. Ramada Inns, Inc.*, 632 S.W.2d 73 (Mo.App.1982). From this the jury could reasonably infer that defendant believed he would benefit financially by disposing of Susan and becoming the sole surviving parent of Robbie and Angela. There was sufficient evidence to permit the submission of and a finding by the jury of the first aggravating circumstance that defendant murdered Susan Davis for the purpose of receiving money or other things of monetary value.

As to the second aggravating circumstance, at the time of Susan's death, defendant was facing two charges of third degree assault and one charge for violation of a protective order. Susan was the key witness for each charge and without her, the state would not be able to make a case. On the day of Susan's disappearance defendant was arraigned on two of the charges which were set for trial a few weeks hence. After Susan's death, all three charges were dismissed.

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Defendant argues it is unreasonable to believe that he would kill Susan because of three misdemeanor charges. This contention is not persuasive. Prior to Susan's death, defendant had several encounters with the law and had been jailed as a result of the three charges against him filed by his wife. She was the key witness in each charge and without her it was readily predictable that the charges could not be established. Though the charges were misdemeanors, defendant faced possible imprisonment. The jury could reasonably infer that defendant killed Susan for the purpose of preventing her testimony against him at trial on the criminal charges.

Next, in determining "[w]hether the sentence of death is excessive or disproportionate to the penalty imposed in similar cases, considering both the crime, the strength of the evidence and the defendant," § 565.035.3(3), we must consider the fact that the death penalty has been applied in numerous cases involving killings for receiving money or any other thing of monetary value. *State v. Pollard*, 735 S.W.2d 345 (Mo. banc 1987), cert. denied 484 U.S. 1020, 108 S.Ct. 733, 98 L.Ed.2d 682 (1988); *State v. Grubbs*, 724 S.W.2d 494 (Mo. banc 1987), cert. denied 482 U.S. 931, 107 S.Ct. 3220, 96 L.Ed.2d 707 (1987); *State v. Bannister*, 680 S.W.2d 141 (Mo. banc 1984), cert. denied 471 U.S. 1009, 105 S.Ct. 1879, 85 L.Ed.2d 170 (1985); *State v. Byrd*, 676 S.W.2d 494 (Mo. banc 1984), cert. denied 469 U.S. 1230, 105 S.Ct. 1233, 84 L.Ed.2d 370 (1985); *State v. Laws*, 661 S.W.2d 526 (Mo. banc 1983), cert. denied

467 U.S. 1210, 104 S.Ct. 2401, 81 L.Ed.2d 357 (1984); State v. McDonald, 661 S.W.2d 497 (Mo. banc 1983), cert. denied 471 U.S. 1009, 105 S.Ct. 1879, 85 L.Ed.2d 170 (1985); State v. Blair, 638 S.W.2d 739 (Mo. banc 1982), cert. denied 459 U.S. 1188, 103 S.Ct. 838, 74 L.Ed.2d 1030 (1983). And in cases where the victim was killed because of his status as a witness. State v. Petary, 781 S.W.2d 534 (Mo. banc 1989), vacated and remanded 494 U.S. 1075, 110 S.Ct. 1800, 108 L.Ed.2d 931 (1990), reaffirmed 790 S.W.2d 243 (Mo. banc 1990), cert. denied --- U.S. ---, 111 S.Ct. 443, 112 L.Ed.2d 426 (1990); State v. Wilkins, 736 S.W.2d 409 (Mo. banc 1987), affirmed sub nom. Stanford v. Kentucky, 492 U.S. 361, 109 S.Ct. 2969, 106 L.Ed.2d 306 (1989); State v. Boliek, 706 S.W.2d 847 (Mo. banc 1986), cert. denied 479 U.S. 903, 107 S.Ct. 302, 93 L.Ed.2d 276 (1986); State v. Gilmore (II), 661 S.W.2d 519 (Mo. banc 1983), cert. denied 466 U.S. 945, 104 S.Ct. 1931, 80 L.Ed.2d 476 (1984). Upon full review we find that the sentence of death imposed in this case is not disproportionate.

Finally examining "[w]hether the sentence of death was imposed under the influence of passion, prejudice, or any other factor," we find no evidence of such from the transcript or legal file and hold the penalty was rationally imposed in proportion to the crime.

Affirmed.

ROBERTSON, C.J., HOLSTEIN, J., and HIGGINS, Senior J., concur.

COVINGTON and BLACKMAR, JJ., concur in part and dissent in part in separate opinions filed.

SEILER, Senior J., concurs in part and dissents in part and concurs in concurring in part and dissenting in part opinion of BLACKMAR, J.

COVINGTON, Judge, concurring in part and dissenting in part.

I concur with the majority in the affirmance of the conviction and denial of postconviction relief. I also concur with the majority in finding that the evidence supports submission of the second statutory aggravating circumstance, § 565.032.2(12), RSMo 1986. As to the first statutory aggravating circumstance, § 565.032.2(4), RSMo 1986, I dissent and concur in the dissenting opinion of BLACKMAR, J.

BLACKMAR, Judge, concurring in part and dissenting in part.

I concur in the affirmance of the conviction and denial of postconviction relief. I cannot, however, join the principal opinion in its summary recitation of case law relied

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on in attempting to exercise our proportionality review function. The majority has again evaded the task of "independent review" under § 565.035, RSMo 1986. This Court too long has indulged the practice of scanning the reporters for cases presenting one or more of the same statutory aggravating circumstances, following which there is a string of citations and a routine affirmance. See State v. Powell, 798 S.W.2d 709, 718 (Mo. banc 1990) (Blackmar, C.J., dissenting).

In more than ten years of litigation under our revised death penalty statute the Court has failed to enunciate standards for the exercise of its statutorily mandated proportionality review. See State v. Holmes, 609 S.W.2d 132, 139 (Mo. banc 1980) (Seiler, J. concurring). In the absence of standards, the Court relies only on the bare language defining aggravating circumstances as the sole criterion for comparing one death penalty case to another. It is quite appropriate to begin proportionality review with the statutory language defining the aggravating circumstances. I am unable, however, to sanction the principal opinion's merely detailing the aggravating circumstance, reciting the supporting evidence, and concluding that, if the jury found the circumstance, the death penalty must be appropriate.

The evils of this habit are ably demonstrated here. The principal opinion follows the lead of the state's brief in grasping to support the charged aggravating circumstances, and, accordingly, the sentence of death. A review of the evidence adduced in support of the aggravating circumstances is in order.

The trial court submitted statutory aggravating circumstances (§§ 565.032.2(4) and (12), RSMo 1986) as follows:

4) That defendant murdered Susan Davis for the purpose of the defendant receiving money or any other thing of monetary value from Susan Davis or another;

12) The defendant murdered Susan Davis because she was a witness in a pending prosecution of the defendant for the offense of assault in the third degree and violation of an order of protection.

When considering whether the evidence supports the aggravating circumstances, the Court lays the foundation to decide whether to uphold the ultimate penalty. It follows that each and every element of the aggravating circumstances relied upon must be established by evidence sufficient to support a jury finding beyond reasonable doubt. State v. Battle, 661 S.W.2d 487, 493 (Mo. banc 1983), cert. denied 466 U.S. 993, 104 S.Ct. 2375, 80 L.Ed.2d 847 (1984).

The first aggravating circumstance (subparagraph 4) is not established by the evidence. In order to submit this circumstance the evidence must show affirmatively that receipt of a thing of value was the purpose of the murder,

and not a mere incident of the defendant's conduct. Particularly misleading is the majority's analysis of the significance of the trust fund. It is quite likely that the jury misunderstood the juxtaposition of the trust fund evidence with the statutory elements in 565.032.2(4). The language of the statute requires that the killing be done for the purpose of receiving value.

Defendant admitted, as the principal opinion states, that he knew the terms of the trust. He knew that Susan's mother was the income beneficiary. The children could not have received their proportionate share of the corpus until the death of Susan's parents. The majority concludes that, because Ralph would become the sole parent, he would therefore exercise dominion over his children and the trust fund. This is a reaching conclusion, indeed. Ralph had no access to the trust fund.

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Only at the death of Susan's parents would the children become beneficiaries. Susan's mother testified that the trust was designed to protect the children. Thus a benefit to the defendant has no tangible foundation.

Also of doubtful substance is the principal opinion's reliance on evidence that the defendant came into possession of Susan's diamond ring. The suggestion that Ralph killed Susan so as to obtain the ring is highly speculative. There is no evidence that Susan was wearing the ring when she disappeared. Nor is there evidence that defendant removed the ring from her at any time. The defendant never realized value for the ring, and so the showing of his needs is hardly persuasive. He rather kept the ring in an envelope in his desk for several years.

Evidence at trial established that two checks were written on Susan's personal checking account and that Susan's signature was forged. The evidence did not show that defendant forged the checks. The suggestion that his purpose was to kill for the account is based on an inference too tenuous to support. At best the evidence shows that, following Susan's disappearance, defendant discovered the checkbook and thereafter sought to draw from the account.

If we are to adopt statutory aggravating circumstances as the measure by which to assess proportionality, we must strictly adhere to the elements set forth in the statute. The evidence must support the circumstance. It is not sufficient to show that the defendant was guilty of a heinous crime unless the evidence supports the circumstances submitted to the jury. The majority appears to hold that it is sufficient to show that the defendant obtained something of value after the death, without a showing of cause and effect. Only by speculation can it be said that the ring, trust fund, or checking account, considered singularly or together, supplied the motivation behind defendant killing Susan. 2

The principal opinion cites seven cases for the proposition that this case is similar to other cases where the jury has found that defendant's purpose was to kill for a thing of value. Each of these cases but one demonstrate the proper occasion for the aggravating circumstance wherein the defendant kills for money or a thing of value. 3 The cases also demonstrate that the Court transgresses *Godfrey v. Georgia*, supra, in holding that substantial evidence supports § 565.032.2(4). In both *State v. Bannister*, 680 S.W.2d 141 (Mo. banc 1984), and *State v. Blair*, 638 S.W.2d 739 (Mo. banc 1982), the defendant was a hired hit man. But for the killing price, the crime would not have occurred. The defendant in *State v. Laws*, 661 S.W.2d 526 (Mo. banc 1983), executed a "get rich quick scheme," deciding to rob the elderly because of his belief that old people are afraid of banks, and thus keep their valuables at home. Similarly, in *State v. Byrd*, 676 S.W.2d 494 (Mo. banc 1984), the defendant's primary goal was to rob a cafeteria. He shot and killed four employees in satisfying his mission. Finally, in both *State v. McDonald*, 661 S.W.2d 497 (Mo. banc 1983), and *State v. Pollard*, 735 S.W.2d 345 (Mo. banc 1987), the evidence showed that the defendant's purpose was robbery and that defendant was lying in wait. These are the cases in which substantial evidence warrants the submission of the aggravating circumstance "killing for a thing of value."

Nor does the evidence in this case support the jury's finding that defendant killed

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Susan because she was a potential witness in three misdemeanor charges pending against him. Section 565.032.2(12) can be satisfied only by a showing that the defendant made a conscious decision to do away with his victim so as to impede prosecution. The majority points to nothing suggesting that defendant killed Susan simply to avoid two charges of third degree assault and one for violation of a protective order. None of the cases cited in support of this proposition involved misdemeanor charges. 4

Finally, I am startled by the State's argument that defendant was required to disclose the location of the body, lest he be labeled "cynical" and "remorseless," and thus condemned to death. This is an incredible theory, fraught with danger. Common sense teaches that to require the defendant to locate a body during the penalty phase is to trample the right of defendant to maintain his innocence. There is diminished use for appeals, postconviction

proceedings, or even habeas corpus if the defendant must somehow admit his guilt in pointing to the body. This concept bootstraps the defendant into an untenable position and it offends the Constitution.

Even if one or both of the aggravating circumstances relied on is minimally supported, there is still no substantial effort at proportionality review. The importance the legislature placed on proportionality review is demonstrated by the provision in the statute for an officer of this Court who has the duty of studying the records of death sentence cases so as to aid our review. § 565.035.6, RSMo 1986. Yet we do not go into the particular facts of the several cases in any depth. We rather seem to apply the same presumption of correctness to a death verdict that we do in other criminal cases, and in civil cases. The legislature contemplated a further review by us.

Since the first affirmance of a death sentence in 1980, this Court has mitigated only one sentence, while affirming sixty-nine. By contrast Georgia, from whom we have borrowed so heavily, has reduced some seven death sentences. *Pulley v. Harris*, 465 U.S. 37, 71, 104 S.Ct. 871, 890, 79 L.Ed.2d 29 (1984) (Brennan, J., dissenting); *Baldus*, *Pulaski*, *Woodworth*, and *Kyle*, *Identifying Comparatively Excessive Sentences of Death: A Quantative Approach*, 33 *Stan.L.Rev.* 1, 2-3 (1980). I doubt that our death cases are so much more polarized than Georgia's.

Because of the speculative support for the aggravating circumstances relied on, and the absence of proportionality review, I am unable to concur in the affirmance of the death sentence.

1 Upon conviction of first degree murder, the State dismissed the charge of armed criminal action.

2 The term "DNA fingerprinting" is one employed by Cellmark Diagnostics Company to describe its own process. "DNA typing", "DNA profiling" and "DNA identification" are interchangeable terms describing the same scientific principles and are so used throughout this opinion.

3 Exceptions appear in cases of identical twins who possess identical genes.

4 It should be noted defendant also obtained specimens of the dried blood from the Escort and sent for testing to Lifecodes, the other major private company which at that time specialized in "DNA fingerprinting." The results of those tests were kept from evidence at trial by defendant.

1 The General Assembly in enacting statutory proportionality review was attempting to comply with the constitutional requirement that the risk of arbitrary and capricious application of the death penalty be minimized. *Gregg v. Georgia*, 428 U.S. 153, 96 S.Ct. 2909, 49 L.Ed.2d 859 (1976); *Godfrey v. Georgia*, 446 U.S. 420, 100 S.Ct. 1759, 64 L.Ed.2d 398 (1980). It borrowed heavily from the Georgia statutes sustained in *Gregg*. See also *State v. Smith*, 649 S.W.2d 417, 435 (Mo. banc 1983), *State v. LaRette*, 648 S.W.2d 96, 107 (Mo. banc 1983) and *State v. Hudgins*, 612 S.W.2d 769, 770 (Mo. banc 1981).

2 I also wonder whether the majority would believe that defendant killed his wife to obtain her automobile. After all, it was a thing of value. This proposition is no less likely than that of the principal opinion.

3 In *State v. Grubbs*, 724 S.W.2d 494 (Mo. banc 1987) the State submitted three aggravating circumstances. The evidence unequivocally supported § 565.032.2(7) in that the murder was outrageously vile and involved torture. The evidence did not support §§ 565.032.2(4) and (10). The evidence showed that after the murder, defendant took thirty dollars and some food stamps and that he wore gloves while inside the victim's residence. This evidence does not show that the murder was committed so as to receive a thing of value or to avoid lawful arrest. *Id.* at 502 (Blackmar, J., concurring).

4 *State v. Petary*, 781 S.W.2d 534 (Mo. banc 1989), vacated and remanded 494 U.S. 1075, 110 S.Ct. 1800, 108 L.Ed.2d 931 (1990), reaffirmed 790 S.W.2d 243 (Mo. banc) cert. denied 498 U.S. 973, 111 S.Ct. 443, 112 L.Ed.2d 426 (1990) (kidnapping victim); *State v. Boliek*, 706 S.W.2d 847 (Mo. banc), cert. denied 479 U.S. 903, 107 S.Ct. 302, 93 L.Ed.2d 276 (1986) (robbery victim). *State v. Gilmore (II)*, 661 S.W.2d 519 (Mo. banc 1983), cert. denied 466 U.S. 945, 104 S.Ct. 1931, 80 L.Ed.2d 476 (1984) (burglary victim). *State v. Wilkins*, 736 S.W.2d 409 (Mo. banc 1987), aff'd sub nom. *Stanford v. Kentucky*, 492 U.S. 361, 109 S.Ct. 2969, 106 L.Ed.2d 306 (1989) (robbery victim).