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Federal Bureau of Investigation
United States Department of Justice
Washington, D.C. 20535

William H. Webster, Director

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“By teaching [children] about one of the problems of the
real world—drunk driving—at an early age and making
them aware of the seriousness of the problems, [they] can be
influential in decreasing the number of traffic-related
injuries and deaths that occur on our Nation’s streets and
highways each year.”
the police and their safety functions. Children score points for knowing the traffic signs they are taught and obeying them in simulated drills. Upon successful completion of the course, each child receives a safety license, or as Officer Bosco states, "an official backseat driver's license."

Unlike most traffic safety programs designed for children, Safetyrama also teaches the youngsters the meaning of driving while intoxicated and the menace drunk drivers create.

The students of the program may be too young to drive, but they are old enough to learn that drinking and driving don't mix. Safetyrama teaches this old message with a new approach.

To help educate young people to the realization that alcohol and driving are dangerous, the program includes a special storybook on "The Misadventures of Wags, Flicks, and Spot," three dogs who find some spilled cans of beer in an alley. Two dogs drink the beer and become drunk and disorderly. Those two dogs are found "sleeping it off" by the police and are eventually hauled away to the city pound, leaving their "sobriest" friend behind. The story is used to stress the effects of alcohol on judgment and physical movement and is followed by a question-and-answer period to make sure the message is clearly understood. It is especially important for the child to learn to distinguish what is safe and what is dangerous and what can happen to someone who is driving while intoxicated. When asked what beer can do to you, one second grader commented, "While you're driving, it can hurt your eyesight and you could hit another person or hit a tree and kill yourself."

As with the traffic safety portion of the program, the driving while intoxicated phase also includes role playing on the DWI course. The road course is set up in the classroom, and two students are selected to act as a truck driver and a driver who is intoxicated. Both students start on different roadways and go through the course at the same time. The DWI driver fails to obey the traffic signs, turning into the path of the truck. A discussion about the results of driving while intoxicated follows, including an explanation of why it is against the law to drive in such a condition. As one student stated when asked what he learned, "Drunk driving on the road is really dangerous and it can damage your brain."

At the end of the program, each student receives a STOP DWI safety patch that he can place on his bicycle or on the dashboard of his parent's car.

The DWI program does not stop at the elementary school level. At the high school level, an intensive DWI program starts with a procedure for a vehicle stop, relative to driving while intoxicated. Students participate in a role-playing simulation of a street test, being placed under arrest, handcuffed, and transported to the central testing unit.

In conjunction with the DWI role playing, there is a DWI slide presentation, which consists of a series of slides on car crashes, broken bodies, morgue scenes, arrests, and methods of survival. The narrative is bold, hard-hitting, and readily makes the high school students stop and take notice.

Conclusion

Children can "talk" safe driving to their parents or other adults if they know traffic safety rules and regulations. By teaching them about one of the problems of the real world—drunk driving—at an early age and making them aware of the seriousness of the problem, these children can be influential in decreasing the number of traffic-related injuries and deaths that occur on our Nation's streets and highways each year.

FBI Law Enforcement Bulletin


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\[\text{FBI Law Enforcement Bulletin} \]

\[\text{Officer Bosco explains the principle of a radar gun to elementary school students.} \]

"This system of investigating municipal corruption has been so successful that law enforcement officials from around the world have studied the Investigative Squad's methods and tactics."

Corruption-related crimes have certain elements that set them apart from other crimes. They are always committed in secrecy with sophistication. Corrupt officials know the strengths and weaknesses of the system and exploit them to their own advantage. Furthermore, successful corruption produces a mutuality of benefit. Participants rarely complain and are unwilling to appear as witnesses.

The department encourages the cooperation of the public, whether they be city employees or private citizens, to report acts of wrongdoing. Similarly, DCI relies heavily on this experience and imagination of its own employees. A minor case will frequently provide subtle hints of a much larger systemic problem.

DCI's cases fall into several categories: bribery and bribery receiving; theft of city money or property, forgery of checks or official documents; impropriety in the awarding of contracts, and gross mismanagement or negligence resulting in wasted city resources.

Such classifications are an oversimplification of the inventiveness and sophistication of the criminal mind.

"End of Investigative Squad's Manual for Operation of the Department of Investigation (DCI) program."

The department receives more than 2,100 complaints each year from a variety of sources which reflect the myriad forms that corruption takes.

"The owner of a newly renovated home reports that a building inspector is demanding a $600 bribe before he will issue a certificate of inspection. A DCI staff member then poses as the sister of the homeowner and is freed relating the $600 payment. The inspector is arrested and his employment terminated."

"Intelligence reports indicate that collectors are stealing parking meter revenues. After a lengthy surveillance operation, seven collectors are arrested, and the contract with the parking meter collection firm is cancelled."

"Analysis of public assistance records indicates that beneficiaries are receiving unusually large numbers of payments. Investigation reveals an..."
Fiber Evidence and the Wayne Williams Trial (Conclusion)

By HAROLD A. DEADMAN
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Part I of this article dealt with the importance of forensic fiber examination. The conclusion discusses the use of fiber evidence in the Williams case.

Development of Williams as a Murder Suspect

Before Wayne Williams became a suspect in the Nathaniel Cater murder case, the Georgia State Crime Laboratory located a number of yellowish-green nylon fibers and some violet acetate fibers on the bodies and clothing of the murder victims whose bodies had been recovered during the period of July 1979 to May 1981. The clothing of the murder victims whose names of those victims were included on the list of missing and murdered children that was compiled by the Georgia State and in rivers in order to verify the associations and determine the strength of the associations resulting from the fiber match.

Two days after Williams' presence on the bridge, the nude body of Nathaniel Cater was pulled from the Chattahoochee River, approximately a mile downstream from the James Jackson Parkway Bridge. A yellowish-green nylon carpet-type fiber, similar to the nylon fibers discussed above, was recovered from the head hair of Nathaniel Cater. When details of Williams' reason for being on the bridge at 2:00 a.m. could not be confirmed, search warrants for Williams' home and automobiles were obtained and were served on the afternoon of June 3, 1981. During the late evening hours of the same day, the initial associations of fibers from Cater and other murder victims were made with a green carpet in the home of Williams. Associations with a bedspread furnished by Williams' bed and with the Williams' family dog were also made at that time.

An apparent source of the yellowish-green nylon fibers had been found. It now became important to completely characterize these fibers in order to verify the associations and determine the strength of the associations resulting from the fiber match.

Because of the unusual cross-sectional appearance of the nylon fiber and the difficulty in determining the manufacturer, it was believed that this was a relatively rare fiber type, and therefore, would not be present in large amounts (or in a large number of carpets). The Williams Carpet

Shortly after Williams was developed as a suspect, it was determined that the yellowish-green nylon fibers were manufactured by the Wellman Corporation. The next step was to ascertain, if possible, how much carpet like Williams' bedroom carpet had been sold in the Atlanta area. Carpet composed of the Wellman fiber and dyed with the same dye formulation as the Williams' carpet. Names of Wellman Corporation customers who had purchased carpet with this fiber type, technical information about the fiber, and data concerning when and how much of this fiber type had been manufactured were obtained.

It was confirmed that the Wellman Corporation had, in fact, manufactured the fiber in Williams' bedroom and that no other fiber manufacturer was known to have made a fiber with a similar cross section. It was also determined that fibers having this cross-sectional shape were manufactured and sold during the years 1967 through 1974. Prior to 1967, this fiber type had been manufactured only in a cross section; after 1974, the unusual trilobal cross section seen in Williams' carpet was modified to a more regular trilobal cross-sectional shape. A list of sales of that fiber type during the period 1967 through 1974 was compiled.
The Weiland Corporation described the fibers used in the construction of Williams' carpet as being composed of a nylon 6,6 polymer called Weiland 1818. The Weiland 1818 fiber was sold to 12 companies from 1967 to 1974 in undisclosed amounts, with 7 inches in length. The purchasers, for the most part, were carpet yarn spinners (companies that prepare yarn from loose fibers). After a carpet yarn is prepared, it is then used to manufacture the face (pile) of the actual carpet. In order to determine the manufacturer of Williams' carpet, it was necessary to contact all purchasers of Weiland carpet fiber like that used in the carpet. These companies, normally those who prepare carpet yarn only, were asked to furnish the names of carpet manufacturers who had purchased carpet yarn made of Weiland 1818 fibers.

At the outset, a problem arose. A number of companies either having purchased Weiland 1818 fibers or having manufactured carpet from yarn composed of Weiland 1818 fibers were no longer in business. Therefore, it was necessary to locate former employees of the defunct companies to see if they could recognize the fibers in Williams' carpet or recognize an actual piece of the carpet from Williams' room. In each of these contacts, a sample of the carpet from Williams' home was made available for display by investigators.

Through numerous contacts with yarn spinners and carpet manufacturers, it was determined that the West Point Pepperell Corporation of Dalton, Ga., had manufactured a line of carpet called "Luxaire," which was constructed in the same manner as the Williams' carpet. One of the fibers offered in the "Luxaire" line was called "English Olive," and this color was the same as that of the Williams' carpet (both visually and by the use of discriminating chemical and instrumental tests).

It was learned that the West Point Pepperell Corporation had manufactured the "Luxaire" line for a 5-year period from December 1970 through 1975; however, it had only purchased Weiland 1818 fiber for this line during 1970 and 1971. In December 1971, the West Point Pepperell Corporation changed the fiber composition of the "Luxaire" line to a different fiber, one that was disimilar to the Weiland 1818 fiber in appearance. Accordingly, "Luxaire" carpet, like the Williams' carpet, was only manufactured for a 1-year period. This change of carpet fiber after only 1 year's production was yet another factor that made the Williams' carpet unusual.

It is interesting to speculate on the course the investigation would have taken if the James Jackson Parkway Bridge had not been covered by the surveillance team. The identification of the manufacturer of the nylon fibers showing up on the bodies and carpet in the Atlanta area could have occurred before any of the other factors that could have affected the course of the investigation. In each of these contacts, a sample of the carpet from Williams' room was taken for comparison to the carpet of concern. Even though several manufacturers had gone out of business during 1970, it was assumed that the Williams' carpet was produced by a company that was still in business.

To convey the unusual nature of the Williams' residential carpet, an attempt was made to develop a numerical probability—something never before done in connection with textile materials used as evidence. Of course, it would have to be known. A search of that type, however, would have accurately answered an important question that was discussed at the trial—the question of how many other homes in the Atlanta area had a carpet like the Williams' carpet. An estimation, to be discussed later, based on sales records provided by the West Point Pepperell Corporation indicated that there was a very low chance (1/7786) of finding a carpet like Williams' carpet by randomly selecting occupied residences in the Atlanta area.

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Probability Determinations

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commercial settings, such as apartment buildings, probably have had a normal lifespan of only 4 to 5 years. The validity of assumption #7 is arguable. However, considering the comparatively small amount of Wellman 181B fiber used to produce carpet, the nature of the coloring process used by the carpet industry, and the actual comparisons of many green carpet fibers, it is believed that no companies using Wellman 181B fiber would duplicate the dye formulation used by West Point Pepperell. (Four individual dyes were mixed to color the Wellman fiber in Williams' carpet.)

The Williams Trial

To any experienced forensic fiber examiner, the fiber evidence linking Williams to the murder victims was overwhelming. But regardless of the apparent validity of the fiber findings, it was during this trial that its true weight would be determined. Unless this, considerable time was spent determining what should be done to convey the full significance of the fiber evidence. Judges are not usually composed of individuals with a scientific background, and therefore, it was necessary to "educate" the jury in what procedures were followed and the significance of the fiber results. In the Williams case, over 40 charts with over 250 photographs were prepared to illustrate exactly what the crime laboratory examiners had observed. Several types of charts were prepared, including:

1. Educational charts to illustrate different classifications of textile fibers and to show the variety that can exist within one fiber classification. Charts listing the microscopes used, as well as the fiber properties and characteristics that are compared during microscopic comparisons.

2. A series of charts showing objects in Williams' environment which were linked to the various victims. These were used to facilitate reference and discussion of particular objects.

3. Charts where photomicrographs of foreign fibers removed from a particular victim were shown next to photomicrographs of similar fibers from known objects in Williams' environment.

Each of the fiber photomicrographs was enlarged to an 8 by 10-inch color print to give a final magnification of approximately 6000. These 8 by 10-inch prints were cropped to a final size of 5 by 7-inches. As many as 16 prints could then be displayed on a standard size 30 by 40-inch chart.

Considerable time and expense were involved in the preparation of the charts used in the Williams trial. This was because of the tremendous amount of evidence linking Williams to the many victims. In a more typical case, where the fiber evidence is not as voluminous, charts and photographs could more easily be prepared.

Representatives of the textile fiber industry, including technical representatives from the Wellman and West Point Pepperell Corporations, were involved in educating the jury regarding textile fibers in general and helped lay the foundation for the conclusions of the forensic fiber examiners. The jury also was told about fiber analysis in the crime laboratory.

The trial, as it developed, can be divided into two parts. Initially, testimony was given concerning the murder of Jimmy Ray Payne. Then, testimony, in the indictment drawn against Williams and Jimmy Ray Payne, the two victims included in the indictment drawn against Williams in 1971, testimony was then given concerning Williams' association with 10 other murder victims.

The fiber matches made between fibers in Williams' environment, and fibers from victims Payne and Cater were discussed. The items from Williams' environment that were linked to either or both of the victims are shown in the center of the chart. (See fig. 5.) Not only is Payne linked to Williams' environment by seven items and Cater linked by six items, but both of the victims are linked strongly to each other based on the fiber matches and circumstances surrounding their deaths.

In discussing the significance or strength of an association based on textile fibers, it was emphasized that the more uncommon the fibers, the stronger the association. None of the fiber types from the items in Williams' environment shown in the center of figure 5 is by definition a "common" fiber type. Several of the fiber types would be termed "uncommon." One of the fiber links to the body of Jimmy Ray Payne to the carpet in the 1971 Williams case, for example, was a small rayon fiber fragment recovered from Payne's shorts.

The following example can be used to illustrate the significance of fiber matches linking automobile manufacturers to victims. This data were compiled with additional information from Georgia concerning the number of these models registered in the Atlanta metropolitan area during 1980. This allowed a calculation to be made regarding the probability of randomly selecting an automobile having carpet material that in the 1970 Chevrolet station wagon from the 2,097,912 cars registered in the Atlanta metropolitan area. This probability is 1 chance in 5,829, a very low probability representing a significant association.

Another factor to consider when assessing the significance of fiber evidence is the increased strength of the association when multiple fiber matches exist between the bodies of the victims. In this way, multiple fiber matches become the basis of the association. This is true if different fiber types are involved in evidence, the chance of finding one particular fiber is much smaller than with either of the single throws. This number is a result of the product rule of probability theory. That is, the probability of the joint occurrence of a number of mutually independent events equals the product of the individual probabilities of each of the events (in this example, X = X = X). Since numerous fiber types from more than one object are found in each fiber type, the chance of finding one particular fiber matches is the product of the individual probabilities, resulting in an extremely small chance.

Overall, the probability numbers obtained were based on valid data and were, in fact, conservative estimates. However, no attempt was made to use the product rule and multiply the individual probability numbers together to get an approximation of the probability of finding carpets like Williams' residence carpet and Williams' automobile carpet in the same household. The probability numbers were used only to show that the individual fiber types involved in these associations were very uncommon. It should be noted that carpet is one of the few types of fibrous material that is suitable for statistical analysis. This is because manmade carpet fibers are usually dyed and have much larger diameters than textile fibers from most other sources. Most carpet fibers have cross-sectional shapes which are only used in carpets and which often are unique to a particular fiber manufacturer. Therefore, a large diameter fiber, especially those that are colored, can usually be identified as having originated from a carpet. Additionally, because carpet is generally a high-cost item, accurate and complete sales records are more likely to exist.
It was also pointed out during the trial that the locations of the fibers - on Payne's shorts and in Cater's head - would have been fully clothed. Although from these findings it would appear that the victims were in the residence of Williams, there was one other location that contained many of the same fibers as those in the composition of various objects in his residence - Williams' station wagon. The environment of a family automobile might be expected to reflect, to some extent, fibers from objects located within the residence. This was true of the 1970 station wagon. With one exception, all of the fiber types removed from Payne and Cater, consistent with originating from items shown in the center of figure 5, were present in debris removed by vacuuming the station wagon. The automobile would be the most logical source of the foreign fibers found on both Payne and Cater if they were associated with Williams shortly before or after their deaths. It should also be pointed out that two objects, the bedspread and the blanket, were portable and could have at one time been present inside the station wagon.

Both Payne and Cater were recovered from the Chattahoochee River. Their bodies had been in the water for several days. Some of the fibers found on these victims were like fibers in the compositions of the bedroom carpet and bedspread except for color intensity. They appeared to have been bleached. By subjecting various known fibers to small amounts of Chattahoochee River water for different periods of time, it was found that bleaching did occur. This was especially true with the carpet and bedspread from Williams' bedroom.

Two crime laboratory examiners testified during the closing stages of the first part of the trial about Williams' association with Payne and Cater. They concluded that it was highly unlikely that any environment other than that present in Wayne Williams' house and car could have resulted in the combination of fibers and hairs found on the victims and that it would be virtually impossible to have matched so many fibers found on Cater and Payne to items in Williams' house and car unless, the victims were in contact with or in some way associated with the environment of Wayne Williams.

After testimony was presented concerning the Payne and Cater cases, the Fulton County District Attorney's Office asked the court to be allowed to introduce evidence in the cases of 10 other victims whose murders were similar in many respects.

There were similarities between these additional victims and Payne and Cater. (See fig. 6) Although some differences can also be seen on this chart, the prosecution considered these differences to fit within the "pattern of killing," which Payne and Cater were a part of. The most important similarities between these additional victims were the fiber matches that linked the 10 of the 12 victims to Williams' environment. The fiber findings discussed during the trial and used to associate Williams to the 12 victims were illustrated during the trial. (See fig. 7.)

The 12 victims were listed in chronological order based on the dates their bodies were recovered. The time period covered by this chart, approximately 22 months, is from July
The combination of more than 28 different fiber types would not be considered so significant if they were primarily common fiber types. In fact, there is only 1 light brown cotton fiber of the 28 that might be considered common. This cotton fiber was blended with acetate fibers in Williams' bathrobe. Light green cotton fibers removed from many victims were not considered or compared unless they were physically intermingled with visible acetate fibers which were considered with originality from the bloodstream. It should be noted that a combination of cotton and acetate fibers blended together in a single textile material, as in the bathrobe, is itself uncommon.

The only other natural fiber of the 28 types discussed was a real-colored woven fiber removed from the body of Patrick Baltazar. This fiber was consistent with woolen fibers in the composition of a leather jacket recovered from Williams' home. Additionally, a rayon fiber of the type also present in this leather jacket was removed from Baltazar's body.

Some of the objects contained more than a single fiber type. All of the different fiber types within each of these objects were recovered from at least one victim.

Williams was strongly linked to all the victims except Joanne Bel. East was a "liver victim," whose body was recovered from the South River in Atlanta 31 days after he was reported missing. The body was preserved during only a pair of weeks, and as would be expected, very few fibers were located.

The bodies of the nine victims were recovered near streets and highways in the Atlanta metropolitan area. It appeared that in all of these cases, the bodies had been moved from the murder scene to the recovery sites. A considerable amount of floral debris was recovered from these nine victims. As would be expected, the number of individual fibers within a fiber type linking any one of these victims to Williams' environment was much larger than in the cases of Payne and Cater. The previous discussion concerning the significance of multiple fiber matches can be applied to the associations in the cases of all the victims except Bel. especially to the association of Patrick Baltazar to Williams' environment. Fibers and animal hair consistent with having originated from both the station wagon carpet and the bedroom carpet were recovered from six of the nine victims.

The apparent bleaching of several fibers removed from the bodies of Payne and Cater was consistent with having been caused by river water. Several fibers similar to those from Payne and Cater were removed from many of the victims whose bodies were recovered on land. Consistent with the bleaching argument, none of the fibers from the victims found on land showed any apparent bleaching. The finding of many of the same fiber types on the remaining victims, which were recovered from different locations, relates the possibility that Payne's and Cater's bodies picked up foreign fibers from the river.

The fact that many of the victims were involved with so many of the same fiber types, all of which were linked to the victims to Williams' environment, is the basis for arguing conclusively against these fibers originating from a source other than Williams' environment.

It is hoped that this article has provided valuable insight concerning the use of fiber evidence in a criminal trial, has provided answers to questions from those in the law enforcement community about textile fiber evidence in general, and has presented convincing arguments to establish Payne Williams' association with the bodies of the murder victims.