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POLYGRAPH TESTING IN THE PRIVATE
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HEARINGS

BEFORE THE

SUBCOMMITTEE ON EMPLOYMENT OPPORTUNITIES

U.S. Congress, House OF THE

COMMITTEE ON EDUCATION AND LABOR

HOUSE OF REPRESENTATIVES

ONE HUNDREDTH CONGRESS

FIRST SESSION

HEARINGS HELD IN WASHINGTON, DC, ON MARCH 5 AND APRIL 30,
1987

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POLYGRAPH TESTING IN THE PRIVATE WORK FORCE

THURSDAY, MARCH 5, 1987

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON EMPLOYMENT OPPORTUNITIES,
COMMITTEE ON EDUCATION AND LABOR,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:06 a.m., in room 2261, Rayburn House Office Building, Hon. Matthew G. Martinez presiding.

Members present: Representatives Martinez, Owens, Jontz, Gunderson, and Grandy.

Staff present: Eric Jensen, staff director; Valerie White, legislative assistant; Tammy Harris, clerk; Mark Powden, minority staff director; Mary Gardner, legislative associate director.

Full committee staff present: Don Baker, committee counsel; Carole Stringer, legislative analyst.

Mr. MARTINEZ. The subcommittee will come to order.

Mr. Williams, author of the bill before us today, is here, and on my left is Mr. Henry. Mr. Henry is from Michigan.

Let me first go to my opening statement and then we will get started with the other members and their comments. As the members join us I will introduce them.

Ranking minority member of the committee is Mr. Steve Gunderson. Welcome, Steve.

Mr. GUNDERSON. Thank you, Mr. Chairman.

Mr. MARTINEZ. Mr. Gunderson is from Wisconsin.

The purpose of today's Employment Opportunities Subcommittee hearing is to receive testimony regarding the use of the lie detector devices, particularly polygraph machines and whether they are accurate in truth and fact detecting in the work place. This hearing will focus on H.R. 1212, the Employee Polygraph Protection Act, introduced by Representative Pat Williams of Montana.

The polygraph lie detector is designed to detect truth and dishonesty by measuring the blood pulse, blood pressure and body temperature levels of workers. It is used to pre-screen applicants for employment, for investigation of specific crimes and for random screening and monitoring in the work force.

Many companies hold that the polygraph provides important protection against major property losses. Companies believe that the polygraph is accurate and some rate accuracy as high as 95 percent. But companies also say that they do not base hiring and

Berry III, M.D., Assistant Dean for Planning, Georgetown University School of Medicine, on behalf of the American Medical Association; Edward Katkin, Chair of Department of Psychology, State University of New York at Stony Brook, on behalf of the American Psychological Association, Robert B. Fitzpatrick, Fitzpatrick and Verstegen, on behalf of the Plaintiff Employment Lawyers Association.

We will start with—Steve, would you care to begin?

Mr. MARKMAN. Thank you, Mr. Chairman and members of the subcommittee.

Mr. MARTINEZ. Steve, could I interrupt you for one minute?

Mr. MARKMAN. Yes, sir.

Mr. MARTINEZ. Your testimonies as written will be entered into the record in their entirety, and we would ask you to summarize and keep us closely, as we can, to the five minute rule.

**STATEMENT OF STEVE MARKMAN, ASSISTANT ATTORNEY
GENERAL, OFFICE OF POLICY, DEPARTMENT OF JUSTICE**

Mr. MARKMAN. Thank you very much. I appreciate the opportunity to appear on behalf of the Department of Justice at this hearing on H.R. 1212, the proposed Employee Polygraph Protection Act.

The Department of Justice vigorously opposes federalizing the law in this area. Such action is directly contrary to the principles of federalism on which our union is based and to which this Administration is deeply committed. Until now, regulating polygraph use has been the responsibility of the states. In fact, 34 states and the District of Columbia have enacted statutes regulating the use of polygraph or other honesty tests or polygraph examiners. To preempt the states in this context where there is no evidence of an overriding need for national policy uniformity, would do violence to an important underlying principle of our union, the belief in the ability and responsibility of the states generally to govern the affairs of their citizens.

The attempt to federalize the law in this arena has implications far beyond polygraph regulation. It is symptomatic of the persistent tendency of government officials in Washington, well-meaning officials, to act as if only we can fully understand and remedy the problems confronting 240 million Americans. It is this attitude that in recent decades has been responsible for the mushrooming growth of a national government that has not only undertaken unmanageable responsibilities, but that also has usurped the decision making authority of private citizens and of the levels of government closest to those citizens, the states and their localities.

This centralizing tendency is not difficult to understand. It is not surprising that public officials and other citizens who believe that their public policy ideas are sound, want those ideas to be imposed uniformly upon the 50 states. Nor is it surprising that citizens who feel strongly about the merits of a public program want to bestow that program upon as many of their fellow citizens as possible. And it is not surprising that a business or other private entity, subject to some form of public regulation, would prefer to abide by a single regulation promulgated by Washington than to have to abide by 50 separate regulations promulgated in Sacramento and Springfield

and St. Paul. It is precisely because each of us can understand the impetus towards centralization of governmental authority that we have to be particularly careful to avoid falling victim to this tendency, and in the process undermining the constitutional balances within our system of government.

This responsibility is particularly acute given the Supreme Court's recent decision in *Garcia v. San Antonio Metropolitan Transit Authority* in 1985. In that case the Supreme Court held that with respect to federal regulation under the commerce power, Congress, not the federal courts, generally is the primary protector of state sovereign rights and responsibilities. In other words, the principal burden of protecting the values of federalism in the commerce context on which this bill is based lies with the members of this body.

Because of their importance to this subcommittee's decision on whether to proceed with H.R. 1212, I would call to your attention the greater discussion in my prepared statement focusing upon the fundamental values of federalism. And we touch briefly upon ideas, such as diversity and competition and trial and error, and experimentation, which we think lie at the heart of the federalism principle.

When these factors are examined in the context of polygraph regulation, the balance in this Administration's judgment is clearly struck in favor of state, not national regulation. Not only is there no need for national enforcement or uniformity with respect to private sector polygraph use, but the benefits of leaving regulation to the states are evident. Polygraph regulation is a complex issue subject to extensive ongoing debate in which a substantial number of reasonable responses are available and have, indeed, been adopted by the states.

Whether or not polygraph testing should be regulated by some level of government is not the issue here. Assuming that polygraphs are abused by private employers—and there is certainly no question that such abuse is possible—the states are as capable as the national government of recognizing and remedying any such problem. In fact, they have the greater incentive to do so since the rights of their own citizens, to whom they are immediately accountable, are involved. Approximately 70 percent of all states have already recognized the need for certain protections in this area, and have provided them through various forms of state legislation.

H.R. 1212 itself takes an inconsistent position on whether polygraph tests are sufficiently valid to be useful. While the bill would ban the use of polygraphs in the private sector, it explicitly recognizes the usefulness of polygraphs for the government by continuing to allow polygraph testing of all governmental employees. Certainly if the machines are reliable indicators of truth or falsity in the public sector, they are equally as reliable in the private sector.

Apparently, a majority of the members of the previous Congress also believed that polygraphs are useful in a variety of private sector contexts. When H.R. 1514 went to the floor on March 12 of last year, it contained a single exemption for companies involved in the storage, distribution or sale of controlled substances. One representative after another offered amendments exempting various in-

dustries from the bill's blanket prohibition. The bill finally passed the House containing not only the original exemption, but also exemptions for workers in nursing homes and children's day care centers, security personnel and public utility employees. From these exemptions, it is clear that the very representatives who have voted to bar the use of polygraphs seem to recognize their usefulness and credibility in certain contexts.

Polygraph regulation, Mr. Chairman, is an issue which requires careful balancing of the interests of consumers, employees, and employers. Possible responses range from relying on the free market, to licensing polygraph examiners, to banning completely the use of polygraphs. While all sorts of variations on these approaches are possible, which precise approach is best for any given state should be left to the citizens of that state. We see absolutely no reason to forestall the vigorous debate on this issue continuing to take place within the states.

In fact, those states that have regulated in this field have adopted widely varying approaches.

Mr. MARTINEZ. One minute to wrap up.

Mr. MARKMAN. Nineteen states and the District of Columbia regulate employers' use of the polygraph. Three states regulate employers' use of other honesty testing devices. Some of these states completely ban the use of polygraphs by private employers; others prohibit employers from requiring employees to take tests, but allow them to be administered to employees who volunteer to take them. Still others exempt certain occupations. There are a wide variety of procedures within the states.

I would like to conclude my remarks with a quote from President Reagan. In an address to the National Conference of State Legislatures, he said:

Today federalism is one check that is out of balance as the diversity of the states has given way to the uniformity of Washington. And our task is to restore the constitutional symmetry between the central government and the states and to reestablish the freedom and variety of federalism. In the process, we'll return the citizen to his rightful place in the scheme of our democracy and that place is close to his government. We must never forget it. It is not the federal government or the states who retain the power—the people retain the power. And I hope that you'll join me in strengthening the fabric of federalism. If the federal government is more responsive to the states, the states will be more responsive to the people.

For these reasons so eloquently articulated by President Reagan, this Administration strongly urges this committee to reject this proposal.

Thank you, Mr. Chairman.

Mr. MARTINEZ. Thank you, Mr. Markman.

[The prepared statement of Stephen J. Markman follows:]

PREPARED STATEMENT OF STEPHEN J. MARKMAN, ASSISTANT ATTORNEY GENERAL,
OFFICE OF LEGAL POLICY

Mr. Chairman and Members of the Subcommittee:

I appreciate the opportunity to appear on behalf of the Department of Justice at this hearing on H.R. 1212, the proposed "Employee Polygraph Protection Act." This bill, if enacted, would prohibit private sector employers from administering polygraph examinations to employees or prospective employees.

The Department of Justice vigorously opposes federalizing the law in this area. Such action is directly contrary to the principles of federalism on which our union is based and to which this Administration is deeply committed. Until now, regulating polygraph use has been the responsibility of the states. In fact, thirty-four states and the District of Columbia have enacted statutes regulating the use of polygraph or other "honesty" tests or polygraph examiners. To preempt the states in this context, where there is no evidence of an overriding need for national policy uniformity, would do violence to an important underlying principle of our union -- the belief in the ability and responsibility of the states generally to govern the affairs of their citizens.

The attempt to federalize the law in this arena has implications far beyond polygraph regulation; it is symptomatic of the persistent tendency of government officials in Washington -- well meaning officials -- to act as if only we can fully understand and remedy the problems confronting 240 million Americans. It is this attitude that, in recent decades, has been responsible for the mushrooming growth of a national government that has not only undertaken unmanageable responsibilities, but that also has usurped the decisionmaking authority of private citizens and of the levels of government closest to those citizens -- the states and their localities. It is an attitude that is responsible for initiatives, such as Gramm-Rudman, the balanced budget and tax limitation constitutional amendments, item veto proposals and constitutional amending conventions.

This centralizing tendency is not difficult to understand. It is not surprising that public officials and other citizens, who believe that their public policy ideas are sound, want those ideas to be imposed uniformly upon the fifty states. It is not surprising that citizens who feel strongly about the merits of a public program want to bestow that program upon as many of their fellow-citizens as possible. And it is not surprising that a business or other private entity subject to some form of public regulation would prefer to abide by a single regulation promulgated by Washington than to have to abide by fifty separate regulations promulgated in Sacramento and Springfield and St. Paul. It is precisely because each of us can understand the impetus toward centralization of governmental authority that we have to be particularly careful to avoid falling victim to this tendency and, in the process, undermining the constitutional balances within our system of government.

As with many things elemental, there is a tendency sometimes to give the principles of federalism short shift. I recognize that it is not always easy to identify a bright line between those responsibilities of government that ought to be carried out by the national government and those more appropriately addressed by the states. Even in this Administration, which is deeply committed to ensuring that each level of government operates in its appropriate sphere, we have sometimes had trouble drawing that line. It is important, nevertheless, that those in the executive and legislative branch not lose sight of the inherent responsibility to confront this matter.

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This responsibility is particularly acute given the Supreme Court's recent decision in Garcia v. San Antonio Metropolitan Transit Authority, 105 S. Ct. 1005 (1985). In that case, the Supreme Court held, with respect to federal regulation under the commerce power, that Congress, not the federal courts, generally is the primary protector of state sovereign rights and responsibilities. As the Court observed,

We continue to recognize that the States occupy a special and specific position in our constitutional system and that the scope of Congress' authority under the commerce clause must reflect that position. But the principal and basic limit on the federal commerce power is that inherent in all congressional action -- the built-in restraints that our system provides through state participation in federal governmental action.

In other words, the principal burden of protecting the values of federalism in the commerce context lies with the Members of this body. As representatives, not only of the citizens of the states, but of the states themselves, it is the Congress that is principally vested with the responsibility to preserve the prerogatives of the states within the constitutional structure. Whatever the merits of the Court's decision in Garcia -- and this Administration opposes its holding and has supported past legislative efforts to modify the Fair Labor Standards Act in response -- its observations on the role of the Congress in upholding federalism can hardly be disputed.

Because of their importance to this Subcommittee's decision on whether to proceed with H.R. 1212, I would like at this time to briefly revisit the fundamental values of federalism. The healthy respect for the states envisioned by the Framers requires that the national government pay as much attention to who should be making decisions as to what decisions should be made and that, where appropriate, it defer to the states. It was the people of the states who created the national government by delegating to that government those limited and enumerated powers relating to matters beyond the competence of the individual states. All other sovereign powers, except for those expressly prohibited the states by the Constitution, are expressly reserved to the states or the people by the Tenth Amendment.

The Framers of the Constitution set up a structure that apportions power between the national and state governments. The values that underlie this structure of federalism are not anachronistic; they are not the result of an historic accident; they are no less relevant to the United States in 1987 than they were to our Nation in 1789. In weighing whether a public function ought to be performed at the national or state level, we should consider the basic values that our federalist system seeks to ensure. Some of those principles include:

Dispersal of Power -- By apportioning and compartmentalizing power among the national and 50 state governments, the power of government generally is dispersed and thereby limited.

Accountability -- State governments, by being closer to the people, are better positioned as a general matter to act in a way that is responsive and accountable to the needs and desires of their citizens.

Participation -- Because state governments are closer to the people, there is the potential for citizens to be more directly involved in setting the direction of their affairs. This ability is likely to result in a stronger sense of community and civic

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virtue as the people themselves are more deeply involved in defining the role of their government.

Diversity -- Ours is a large and disparate nation; the citizens of different states may well have different needs and concerns. Federalism permits a variegated system of government most responsive to this diverse array of sentiment. It does not require that public policies conform merely to a low common denominator; rather, it allows for the development of policies that more precisely respond to the felt needs of citizens within different geographical areas.

Competition -- Unlike the national government which is necessarily monopolistic in its assertion of public authority, the existence of the states introduces a sense of competition into the realm of public policy. If, ultimately, a citizen is unable to influence and affect the policies of his or her state, an available option always exists to move elsewhere. This option, however limited, enhances in a real way the responsiveness of state governments in a way unavailable to the national government.

Experimentation -- The states, by providing diverse responses to various issues which can be compared and contrasted, serve as laboratories of public policy experimentation. Such experimentation is ultimately likely to result in superior and in some instances naturally uniform policies, as states reassess their own and other states' experiences under particular regulatory approaches.

Containment -- Experimenting with varying forms of regulation on a smaller, state scale rather than on a uniform, national scale confines the harmful effects of regulatory actions that prove more costly or detrimental than expected. Thus, while the successful exercises in state regulation are likely to be emulated by other states, the unsuccessful exercises can be avoided.

While these values of federalism may often mitigate in favor of state rather than national action, other factors -- including a demonstrated need for national policy uniformity or for a monolithic system of enforcement -- mitigate in favor of action by the national government and must be balanced in this process. For example, the need for a uniform foreign policy on the part of the United States clearly justifies national rather than state action in this area. Similarly, in the interstate commerce area, the need for a uniform competition policy argues strongly for national antitrust law; and the need for efficient flow of interstate transportation argues for national rather than state regulation of airplane and rail safety. In other words, by federalism, we are not referring to the idea of "state's rights"; rather, we are referring to the idea expressed in the Constitution that certain governmental functions are more properly carried out at the level of the fifty states, while others are more properly carried out by the national government. Thus, it is critical that we not lose sight of the need to go through this analytic process.

When these factors are examined in the context of polygraph regulation, the balance in the Administration's judgment is clearly struck in favor of state, not national, regulation. Not only is there no need for national enforcement or uniformity with respect to private sector polygraph use, but the benefits of leaving regulation to the states are evident; polygraph regulation is a complex issue, subject to extensive ongoing debate, in which a substantial number of reasonable responses are available to (and have indeed been adopted by) the states.

Whether or not polygraphs should be regulated by some level of government is not the issue here. Assuming that polygraphs

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are abused by private employers -- and there is no question that such abuse is possible -- the states are as capable as the national government of recognizing and remedying any such problem. In fact, they have the greater incentive to do so since the rights of their own citizens, to whom they are immediately accountable, are involved. As I indicated earlier, 70% of the states have already recognized a need for certain protections in this area and have provided them through various forms of state legislation.

There are a number of interests that must be balanced in determining whether or how to regulate polygraphs. For example, while certain employees may be concerned about the intrusiveness of polygraph regulation, other employees -- for example, employees falsely accused of stealing from their employers -- may desire the availability of polygraph tests in order to support their innocence.

Moreover, by protecting employees from the use of polygraph tests, employers are necessarily restricted in their use of a test that may help ensure they are hiring honest or firing dishonest employees. No one can dispute the need for identifying and discharging dishonest or thieving workers. From losses reported during a recent random sampling of three industries -- retail department store chains, general hospitals, and electronic manufacturing firms -- the National Institute of Justice estimated that business and industry lose to employee theft five to ten billion dollars annually. Not only are employers losing valuable assets and paying higher prices for theft insurance policies, but, to the extent possible, employers pass on those costs in the form of higher prices to consumers. Some of the commodities diverted -- drugs, for example -- impose their own costs on society. According to the Drug Enforcement Administration, legally produced drugs, falling in the wrong hands, kill and injure twice as many people annually as illicit drugs. DEA estimates that half a million to a million doses of drugs are stolen each year by employees of pharmacies and wholesale drug manufacturers and distributors.

Those opposed to the use of polygraphs will argue that the test is inaccurate and cannot provide employers with useful information. Certainly, the validity of polygraphs has been widely debated during the last two decades. The scientific community itself is divided. One camp, led by Prof. David C. Raskin of the University of Utah published, in 1978, a study assessing polygraphs to be 90 percent accurate, when properly conducted and evaluated. The opposing camp, led by Dr. D. T. Lykken of the University of Minnesota, claims that the test is much less accurate and that it works to screen out the most honest, most conscientious employees. As the dissenters of the House Committee on Education and Labor indicated in their report on H.R. 1524, the Employee Polygraph Protection Act of 1986, which passed the House during the last Congress, "Field studies are difficult to validate, and 'laboratory' studies cannot exactly replicate polygraph usage. The Office of Technology Assessment (OTA) in a 1983 report concluded that 'no overall measure or single, simple judgment of polygraph testing validity can be established based on available scientific evidence.'" What is essential to recognize here is, not that one side or the other has satisfied the burden of persuasion, but that the current debate is an ongoing and vigorous one.

Apart from the debate in the scientific community, a number of employers obviously believe that polygraphs are useful devices for aiding them in making responsible decisions about existing or prospective employees. According to last Congress' House Committee Report on H.R. 1524, more than two million polygraph tests are administered in the private sector each year, triple the number given ten years ago. From an economic perspective, it seems highly unreasonable to believe that employers would incur

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the cost of \$50-\$60 per test and risk generating some bad will among valuable or potentially valuable employees, and perhaps losing them to competitors, if those employers did not believe the tests provided useful information. Moreover, it must be remembered that the alternatives to polygraph tests -- for example, background checks and personal interviews in the preemployment screening context -- may be far more highly subjective and may intrude upon privacy interests in at least as substantial a way. The value of polygraphs, therefore, should be analyzed not by some unattainable, ideal standard, but with reference to existing, real-world investigative alternatives. Again, these are considerations as to which different citizenries in different states may reasonably come to different conclusions.

H.R. 1212 itself takes an inconsistent stand on whether polygraph tests are sufficiently valid to be useful. While the bill would ban the use of polygraphs in the private sector, it explicitly recognizes the usefulness of polygraphs for the government by continuing to allow polygraph testing of all governmental employees. Certainly if the machines are reliable indicators of truth or falsity in the public sector they are equally as reliable in the private sector.

Apparently a majority of the Members of the 99th Congress' House of Representatives also believed that polygraphs are useful in a variety of private sector contexts. When H.R. 1524 went to the floor on March 12 of last year, it contained a single exemption for companies involved in the storage, distribution, or sale of controlled substances. One representative after another offered amendments exempting various industries from the bill's blanket prohibition. The bill passed the House containing not only the original exemption, but also exemptions for workers in nursing homes, and children's day care centers, security personnel, and public utility employees. From these exemptions it is clear that the very representatives who have voted to bar the use of polygraphs seemed to recognize their usefulness and credibility in certain contexts.

More than that, however, these exemptions again highlight the arbitrary nature of decisions on which occupations to exempt. If polygraphs provide benefits to employers in the armored car industry, it is difficult, if not impossible, to understand why banks (where 84% of losses are attributed to employee theft) or the legal gaming industry (where large sums of money change hands and policing of employees is extremely difficult) are not entitled to the same benefits. Likewise, if polygraphs are useful to protect employers and the public from prospective employees seeking sensitive positions involving the distribution or sale of controlled substances, they would seem to be equally useful for screening prospective employees for other sensitive positions, such as airport security personnel, employees involved with the production, utilization, and transportation of nuclear materials and truck drivers transporting munitions and other hazardous materials.

What all of this indicates is that polygraph regulation is a complex and emotional issue which poses a number of questions with no definitive answers. It is an issue which requires careful balancing of the interests of consumers, employees, and employers. Possible responses range from relying on the free market, to licensing polygraph examiners, to banning completely the use of polygraphs. While all sorts of variations on these approaches are possible, which precise approach is best for any given state should be left to the citizens of that state. We see no reason to forestall the vigorous debate on the issue continuing to take place within the states.

In fact, those states that have regulated in this field have adopted widely varying approaches. Nineteen states and the District of Columbia regulate employers' use of the polygraph;

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three states regulate employers' use of other "honesty testing devices." Some of these states completely ban the use of polygraphs by private employers; others prohibit employers from requiring employees to take the tests, but allow them to be administered to employees who volunteer to take them; still others exempt certain occupations -- ranging from police and firefighters to jewelers to pharmaceutical companies -- from the ban. Six of these states additionally regulate polygraph examiners. Of those states that do not directly regulate employers' use of polygraphs, thirteen regulate polygraph examiners -- some requiring licensing, some limiting the types of questions that can be asked to employees. This diversity, with the alternatives it provides to citizens -- some of whom are vigorously opposed to polygraph use and some who are its adamant supporters -- and the ability to experiment with different approaches it allows, is one of the primary reasons the Framers of our Constitution created a two-tiered system of government, with much of the regulatory authority remaining with the states.

I would like to conclude my remarks with a quote from President Reagan. In an address to the National Conference of State Legislatures on July 30, 1981, he states:

Today federalism is one check that is out of balance as the diversity of the states has given way to the uniformity of Washington. And our task is to restore the constitutional symmetry between the central government and the states and to reestablish the freedom and variety of federalism. In the process, we'll return the citizen to his rightful place in the scheme of our democracy and that place is close to his government. We must never forget it. It is not the federal government or the states who retain the power -- the people retain the power. And I hope that you'll join me in strengthening the fabric of federalism. If the federal government is more responsive to the states, the states will be more responsive to the people . . .

For the reasons so eloquently articulated by President Reagan, I urge that this bill not be enacted.

Mr. MARTINEZ. Before we go to Dr. Beary, let me introduce the two new members of our committee that have joined us. Major Owens from New York and our newest member to the committee from Indiana, Jim Jontz. Thank you for joining us.

Mr. JONTZ. Thank you, Mr. Chairman.
Mr. MARTINEZ. And with that, we will go to Dr. Beary.

STATEMENT OF JOHN F. BEARY III, M.D., ASSISTANT DEAN FOR PLANNING AND DEVELOPMENT, GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE, ON BEHALF OF THE AMERICAN MEDICAL ASSOCIATION, ACCOMPANIED BY BRUCE BLEHART, DEPARTMENT OF FEDERAL LEGISLATION, AMERICAN MEDICAL ASSOCIATION

Dr. BEARY. Thank you, Mr. Chairman and members of the committee. I am pleased to be here today representing the AMA. And with me is Bruce Blehart from the Association's Department of Federal Legislation.

Mr. Chairman, the AMA does not support the use of the polygraph for employment purposes because the polygraph testing and scoring methods currently used in personnel screening have not been shown to be valid tests of truthfulness with a high level of predictability. The Council on Scientific Affairs studied this matter thoroughly, and we will provide this for the record.

We have heard today that there has been a great increase in the number of polygraph examinations being administered, about 2 million a year at the present time. This increase in use has arisen in spite of the fact that the scientific validity underlying the polygraph test has not been established. And my comments today will be directed at the scientific aspects.

I think the most important point to make is that there is no such machine as a lie detector, and there may never be. The theory is without scientific foundation. Basically it boils down to that there is no Pinocchio response. If you lie, your nose does not grow a half inch longer or some other unique bodily response. This point seems to have been somewhat obscured in the ten years of debate about all this. But it is a very important one to focus on.

The polygraph is an excitement detector. It is not a lie detector. It measures your heart rate and your blood pressure, things physicians are used to looking at every day in the offices and have some feeling about that. We are certainly comfortable about what that means and what it does not mean. And what it boils down to, that a person can be excited for many different reasons other than lying.

The best that the proponents can say about the polygraph is that it can provide some evidence of deception, somewhat statistically better than chance. Now, keep in mind, any of you, if you have got a quarter in your pockets, you have got a lie detector that is 50 percent accurate because there are only two choices: lying or truth-telling, heads or tails. So, you cannot get worse than 50 percent really, and the statistics are somewhat complicated.

But we'll provide for the record an article from Lancet in 1986, some JAMA reprints, January 1987, and an article from the Amer-

ican Family Physician in March '86. It is better just to look at that go over it because it is complicated to explain in oral testimony.

Now, just a few comments on the polygraph in the employment setting. The polygraph is not accurate enough to establish the ultimate proof of guilt or innocence in a criminal trial. Its use as a condition of employment is even less credible, and Mr. Williams clearly understands the statistics behind this. And you can view it as sort of having an inaccurate fire alarm. And Dr. Phillips who was involved in writing the January '87 AMA article had this to say about it. And I think this analogy lays it out rather well.

"This suggests that the polygraph is as dependable as a fire alarm that turns in nine false alarms for every true warning of a fire. However, when fire fighters arrive on the scene, they can rapidly determine if a building is on fire or not and determine whether the alarm is true or false." Unfortunately, the accused person who has fallen victim to a false alarm from the polygraph has no equally simple way to prove that he or she is really telling the truth. If they knew that, they would not be given the test, of course.

What this means in practice is that a large number of honest people will continue to be unjustly implicated as liars, criminals and traders as long as the polygraph continues to be used and trusted as a lie detector.

So, I think the AMA Council's report—the most important thrust they put on that was that there is no such machine as a lie detector, and that its use for screening is very, very poorly founded. And the Lancet article speaks more about the specifics of the false positives, the specifics of the false negatives, what prevalence, sensitivity, specificity all that means. But it is not worth spending more time at the moment.

In summary, the AMA Council for Scientific Affairs has deep concerns about this subject, encourages that good science be applied to this important area of public policy. And we stand ready to answer any questions you may have.

Mr. MARTINEZ. Thank you, Dr. Beary.

[The prepared statement of Dr. John F. Beary follows:]

STATEMENT
of the
AMERICAN MEDICAL ASSOCIATION
to the
Subcommittee on Employment Opportunities
Committee on Education and Labor
U. S. House of Representatives

Presented by
John F. Beary III, M.D.

RE: Use of Polygraph Examinations in Employment

March 5, 1987

Mr. Chairman and Members of the Committee:

My name is John F. Beary III, M.D., and I am Assistant Dean for Planning and Development, Georgetown University School of Medicine. With me is Bruce Blehart of the Association's Department of Federal Legislation.

I am pleased to appear before this Subcommittee to share with you the American Medical Association's concerns about the use of polygraph testing in the employment setting.

Mr. Chairman, the AMA does not support the use of the polygraph for employment purposes in private industry or federal agencies because the polygraph testing and scoring methods currently used in personnel screening have not been shown to be valid tests of truthfulness with a

high level of predictability. This position and testimony are based on a study by the AMA's Council on Scientific Affairs. (A copy of the full report is attached.)

Background and Present Use

The criminal justice system has long refused to recognize the validity of polygraph testing. Since the landmark decision of Frye v. United States in 1923, [293 F. 1013 (D.C. Cir. 1923)] polygraph test results have not been admissible as evidence to prove guilt or innocence in a criminal trial. Nonetheless, outside the courtroom, where a false determination of an individual's truthfulness may be just as damaging as an unjust judicial decision, our society is witnessing a rapidly growing use of the polygraph to test truthfulness.

Ten years ago, an estimated 250,000 to 400,000 polygraph examinations were being administered a year. In 1983, the American Civil Liberties Union estimated that 1 million tests a year were being given. In the federal agencies alone, over 23,000 polygraph tests have been performed. However, this great increase in the polygraph's use has arisen in spite of the fact that the scientific validity underlying the polygraph test has not been established.

Evidence of Polygraph Inaccuracy

The best that can be said about the polygraph is that it can provide evidence of deception or honesty in a percentage of people that is statistically somewhat better than if chance judgments were made. Studies indicate, however, that polygraph tests result in enough false-positive and false-negative findings of truthfulness that their

value should be thought of as not much better than the probabilities of chance in any setting -- criminal or employment.

Statistics show repeatedly that the innocent subject is much less likely to be found innocent than the guilty subject is to be found guilty in the criminal setting. In 1983, the Office of Technology Assessment (OTA) published a review of ten studies of polygraph testing in which the range of values for the percentages of correct or incorrect decisions of guilt or innocence by the examiners varied widely. In one recent study, 91.5% of guilty but only 29% of innocent subjects were correctly identified. In a more recent study, 75.1% of guilty and 63% of innocent determinations were accurate.

Examining the validity of polygraph testing is itself difficult. A primary difficulty in properly assessing the validity and reliability of polygraph testing is that the "ground truth" being sought in the testing is not always known. Although polygraph instrumentation is rather standard, another difficulty is that the structuring and the substance of the questions (depending on the purpose of the test) are central to the effectiveness of polygraph tests and require great expertise on the part of the examiners. These variables, many of which are subjective in nature, often are difficult to quantify.

Also, the skill, training, and personal abilities of the examiner, again largely subjective variables, are at issue. In one study, ten trained polygraph examiners were asked to make judgments on polygraph records of actual criminal suspects without any interaction with the subjects. Of the 1120 truth/deception judgments made by the ten

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examiners, only 63.1% were correct, 35.7% were wrong, and 1.2% were inconclusive. The examiners were also asked to score the level of confidence in the judgment made in each case. Their confidence was higher for judgments of deception than for truthful decisions.

Polygraph in the Employment Setting

The polygraph test is not accurate enough to establish the ultimate proof of guilt or innocence in a criminal trial. Its use as a condition of employment is even less credible, as the few studies done concerning employment testing indicate. In fact, because questioning in the employment setting deals with more minor issues with the consequences of failure less serious than in a criminal case, it could be anticipated that the physiologic arousal of the subject might be less impressive and the deception of the examiner even easier than in a criminal case.

Most importantly, an unacceptable percentage of "innocent" persons may be labeled as "deceptive" in a polygraph screening situation in which most of those screened were truthful. It has been estimated that, even if the results of the polygraph testing were 95% valid and the predictive value was 50%, in a screened population of 1000 in which 5% were guilty of some transgression, 47 of the 50 guilty people would be apprehended but 47 innocent people would also be labeled as guilty.

Thus far, studies on the polygraph testing techniques used in the employment setting are few, and their scientific validity is certainly no better than in the criminal investigation. In five analogue studies of one common technique used in employment testing, the correct determination of guilt ranged from 60% to 87% and of innocence from 42%

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to 91%. In a review of another technique, the accurate determination of guilt was 60% to 95% and of innocence was 80% to 100%. From these results, it is fair to conclude that the kinds of techniques used in the employment setting are plagued with the same problem of false identification of innocent subjects as in the criminal setting. However, the consequences could be far more damaging. In comparison to the criminal setting where decisions on probable cause and other evidentiary considerations have probably been made before a polygraph test is given, employee subjects are typically not so narrowly selected. There is a far greater likelihood that innocent subjects will be falsely identified in the employment setting.

Conclusion

Mr. Chairman, it is well established that the polygraph can recognize guilty subjects with an accuracy of between 60% and 95% in the criminal setting, which is somewhat better than chance. However, there is a significant rate of false-positive and false-negative determinations of deception so that the polygraph test should never be the sole arbiter of guilt or innocence in any setting.

The use of the polygraph test in applications other than criminal investigation, most importantly in the employment setting, has not been adequately studied. In those few studies reported on noncriminal subjects, a wide range of false-positive and false-negative results has been reported, which is similar to that found in the criminal setting. Those results suggest too low a predictability for serious consideration of the polygraph test's use in the employment setting. Not only is there

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a significant false-positive rate, which would misclassify some innocent, truthful subjects as deceptive, but many countermeasures have been used -- sometimes with reproducible success -- to fool the polygraph examiner.

Unless polygraph testing and its scoring as currently used in personnel screening can be shown to be valid with a high level of predictability, the AMA does not support the use of the polygraph in industry or in federal agencies as a preemployment test. The AMA recommends that research to a much greater extent than is now planned should be supported and conducted if testing for employment purposes (including security clearances) is to be considered.

Mr. Chairman, we would be pleased to address any questions the Committee may have.

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Council Report

Polygraph

Council on Scientific Affairs

The American Medical Association (AMA) Council on Scientific Affairs has reviewed the data on the validity and accuracy of polygraph testing as it is applied today. The use of the control question technique in criminal cases is time honored and has seen much scientific study. It is established that classification of guilty can be made with 75% to 97% accuracy, but the rate of false-positives is often sufficiently high to preclude use of this test as the sole arbiter of guilt or innocence. This does not preclude using the polygraph test in criminal investigations as evidence or as another source of information to guide the investigation with full appreciation of the limitations in its use. Application of the polygraph in personnel screening, although gaining in popularity, has not been adequately validated. The few limited studies that have been performed suggest no greater accuracy for the types of testing done for this purpose than for the control question polygraph testing used in criminal cases. The effect of polygraph testing to deter theft and fraud associated with employment has never been measured, nor has its impact on employee morale and productivity been determined. Much more serious research needs to be done before the polygraph should be generally accepted for this purpose. (JAMA 1982;252:1172-1175)

THE POLYGRAPH is a combination of instruments that records a subject's blood pressure, pulse, respirations, and galvanic skin resistance while a series of questions are posed. In a pretest process, the examiner asks a series of questions to evaluate the voluntary subject (suspect), obtains an informed consent, derives necessary background information, and establishes the kind of relationship that facilitates the test by putting the subject at ease and stabilizing the parameters being measured. Finally, the formal questioning is begun. The subject is given a series of carefully formulated questions: the relevant questions dealing with the issue at hand, irrelevant questions, and control questions. The latter are

designed to create the probability that the subject will lie or at least be unsure of the truth of his answer. By comparing the magnitude of responses to relevant and control questions with those to irrelevant questions, the examiner makes an interpretation on the truth, falsity, or inconclusive nature of each response. This is called the "control question technique."

In other applications (eg, federal security and preemployment testing), control questions, relevant/irrelevant questions, or the techniques of concealed information, guilty knowledge, and peak of tension tests are employed. In each of these last techniques, questions are targeted with a different intention than in the control question technique. Thus, although instrumentation is rather standard, it is the structuring and the substance of the questions, depending upon the purpose of the test, that require great expertise and that are central to the effectiveness of the tests. The control question technique has been used for criminal testing and has seen the greatest study.

These "lie detector" tests have been offered in court as evidence since the 1920s. However, in 1923 in the landmark case of *Frye vs United States* (233 F 1013 [DC Cir 1923]), it was stated

that "the systolic blood pressure deception test" has not yet gained such standing and scientific recognition among physiological and psychological authorities as would justify the courts in admitting expert testimony deduced from the discovery, developments, and experiments thus far made." Even after 60 years, this doctrine is still quoted widely in the courts. However, employers are increasing their use of the polygraph to screen prospective employees and workers to determine union sympathies and other attitudes. Even ten years ago, 250 000 to 400 000 polygraph tests were being given per year; in 1983, the American Civil Liberties Union estimated that 1 million tests a year were being performed. In 1982, there were an estimated 3000 polygraph examiners in the United States, and in the federal agencies alone, 23 000 polygraph tests have been performed.¹

A National Security Decision Directive 84 (presidential directive, March 11, 1981) authorized executive agencies and departments to require that employees take a polygraph test in investigation of "leaks" of classified information to the media. On Oct 19, 1983, the Department of Justice announced that administration policy would also permit government-wide polygraph use for preemployment clearance and other screening of employees, and the Department of Defense has authorized its use in security screening of employees with access to highly sensitive material. Nevertheless, it is important to recognize that, even though such application may be helpful

From the Council on Scientific Affairs, American Medical Association, Chicago.
Report G of the Council on Scientific Affairs, adopted by the House of Delegates of the American Medical Association at the 1984 term meeting.
This report is not intended to be construed or to serve as a standard of medical care. Standards of medical care are determined on the basis of all of the facts and circumstances involved in an individual case and are subject to change as scientific knowledge and technology advance and patterns of practice evolve. This report reflects the views of scientific experts and reports in the scientific literature as of December 1984.
Report requests to Council on Scientific Affairs, American Medical Association, 535 N Dearborn St, Chicago, IL 60610 (William R. Hendee, PhD).

to the agency, the scientific validity underlying the polygraph test has not yet been established for these purposes.

VALIDITY OF POLYGRAPHY

There is a large amount of experimental psychological literature that examines many physiologic variables of subjects who, under experimental conditions, are asked about a mock crime they may have committed or about certain knowledge they may have been given and told to deny. This type of controlled analogue study may be very important in studying the reproducibility of test methods, examining the parameters most sensitive to deception, and generally defining the limits of the method; however, such studies can only provide a weak simulation of the real-life situation in which perhaps less scientifically motivated examiners are testing people who have been accused of serious crimes. Experienced examiners have claimed that a subject's behavioral cues can often enhance the likelihood of recognition of a deception. It has been shown in the experimentally controlled mock crime situation that an attentive examiner can detect such cues with a frequency that statistically is significantly higher in the untruthful group than in the truthful.

The difficulty in properly assessing the validity and reliability of polygraphy is partly because the "ground truth" is not always known, on the one hand, and the skill and training of the examiner may be at issue on the other. In one interesting study, field-trained polygraph examiners were asked to make blind judgments on polygraph records of 112 criminal suspects drawn from verified and unverified police investigations.¹ Half of the records had been verified (a ground truth was known through a confession); in the other half, the suspect had finally been judged truthful or deceptive by the original polygraph examiner. Cases were also divided between crimes against persons and crimes against property and between truthful and deceptive; thus, 14 sets of polygraph records were examined in each of eight categories. It is emphasized that only the records were examined; the ten examiners had no interaction with the subjects themselves.

In total, ten examiners made 1120 truth/deception judgments. Of these, 63.1% were correct, 1.2% were inconclusive, and 35.7% were wrong. There were no significant differences for verified or unverified records, for crimes against persons or property, or for

evaluations by experienced and less experienced investigators. The examiners were asked to score the level of their confidence in the judgment made in each case. It was higher for deception than for truthful decisions. They also made more false-positive errors and fewer false-negative errors in records based on crimes against persons than on those against property, which suggests that crimes against persons may elicit a stronger physiologic reaction. In this study, true-positive judgments of deception averaged about 77% accurate, whereas true-negative judgments (against deception) were only 51% accurate.

The Office of Technology Assessment (OTA) review considered the outcome of validity measurements in ten such field studies that met their minimum criteria for scientific rigor: a reasonable basis for "ground truth," i.e., was known. The range of values for the percentages of correct or incorrect decisions of guilt or innocence varied widely. In one recent study, 91.5% of guilty but only 29% of innocent subjects were correctly identified (52.9% false-positives and 17.6% inconclusive).² In a more recent study, 75.1% of guilty and 63% of innocent determinations were accurate, the remainder being false-positive guilty (26.0%) and innocent (37%) decisions.³ Thus, it can be concluded that, although the polygraph can provide evidence for deception or honesty in a percentage of people that is statistically better than chance, there are enough false-positives and false-negatives to make many applications, perhaps even in criminal cases, of dubious value.

PERSONNEL SCREENING AND PUBLIC POLICY USES

It is obvious that the polygraph is not yet sufficiently accurate to establish the ultimate proof of guilt or innocence in a criminal trial. Its use as a condition of employment to establish national security clearance, determine union sympathies, or detect employees guilty of theft, breach of confidence, or other misconduct has become widespread; however, the few studies that have been done suggest that the techniques employed are no more accurate than the control question method discussed above. In fact, because the questioning deals with more minor issues and the consequence of failure is less serious than in a criminal case, it could be anticipated that the physiologic arousal of the sympathetic system might be less impressive and the deception of the examiner even easier than

in a criminal case. Furthermore, the application of the polygraph test to a group, most of whom are certainly innocent, may frighten some into more careful and truthful answers but will also lead to a low level of predictability with a large number of false-positive results.

The erosion of employee morals and the risk of employer liability may not be worth the possible benefits of uncovering a disloyal employee. Furthermore, an unacceptable percentage of "innocent" persons may be labeled as "deceptive" in a polygraph screening situation in which most of those screened were truthful. It has been estimated that, even if the results of the polygraph testing were 95% valid and the predictive value was 50%, in a screened population of 1000 in which 5% were guilty of some transgression, 47 of the 50 guilty people would be apprehended but 47 innocent people would also be labeled as guilty.⁴ These calculations, although based on reasonable estimates from the experience in the field with criminal testing, may be too optimistic. Most potential employees are not under the same duress as a criminal on trial and, thus far, studies on the field techniques used in such applications are few and their scientific validity is no better than in the criminal investigation.

There have been no adequate field personnel screening techniques now used for trials of the techniques used for personnel screening, although analogue studies of the validity of some of the techniques used have been performed. The zone of comparison test and the modified general question test are based on the same premises and share the underlying rationale of the control question technique. Another format of questioning includes concealed information tests to detect whether the subject has information about a crime that only a guilty subject would have. It may take the form of a guilty knowledge test (GKT) or the peak of tension (POT) test.

In the GKT, there is a larger series of questions that may be of the multiple-choice type as opposed to "yes" and "no" or true and false, and they focus on specific details known only to the perpetrator of the guilty act. In the POT test, five to nine nearly identical questions are asked to which the subject is instructed to answer "no." The critical question is placed in the middle of the series, so that the physiologic response will build up to a peak at that point (if there is guilty knowledge) and then fall back down again as the questioning continues.

Analogue studies on students or oth-

er experimental subjects under controlled conditions have been reviewed.⁵ In five studies of control question testing, the correct determination of guilt ranged from 60% to 87% and of innocence from 42% to 91%. Inconclusive results ranged from 5% to 44%, and false-negative (incorrect) results for the innocent ranged from 2% to 17% (average). In a review of five of the GKT analogue studies (which were not truly comparable in design), the accurate determination of guilt was 60% to 95% and of innocence was 80% to 100%. In these studies, an incorrect classification of guilty was made in 8% to 40% of subjects (average, 20%) and misclassification of the innocent as guilty averaged about 5%. Thus, it is fair to conclude that the concealed information tests are plagued, if perhaps less severely, with the same problem of false identification of innocent subjects.

The only analogue study that comes close to applying the control question technique tested military intelligence personnel in preemployment examinations.⁶ Volunteers from the intelligence community were asked to respond to a series of questions on date and place of birth, educational history, employment, and residence information. Half of the subjects were told to give certain false information and were offered a reward if they could fool the examiner. Using a zone of comparison technique, the greatest control method, and the relevant/irrelevant technique, the identification of truthful subjects was accurate in 62% to 77% and incorrect in 15% to 23%; in 4% to 19%, the results were inconclusive. Thus, it can be concluded that a great variation in accuracy of classification and a substantial misclassification of truthful subjects occur regardless of the technique employed.

FACTORS AFFECTING POLYGRAPH VALIDITY

Because of the relatively high incidence of false-positive results, many students of polygraphy have tried to improve its accuracy by allowing for, or even eliminating, certain factors that have been shown to impact upon the test's validity. Others have studied countermeasures that might be successful in helping the suspect to defeat the test system. These factors may be broken down into operator characteristics, test subject characteristics, the setting for the test, and external influences. These have been reviewed at length in the OTA report; thus, only selected factors are listed here for the sake of brevity.

Operator Characteristics

Experience.—In one study, assessments made by experienced operators were shown to have a higher validity (91.4%) than those of interns being trained in the questioning technique (75.5%).⁷

Type of Training.—Objective scoring techniques (perhaps by computer) vs subjective analysis of responses need to be studied further to determine the most effective modality.

Selection of Polygraph Trainees.—This factor may play a role not yet identified.

Subject Characteristics

Gender.—Most testing has been done in males; there are few comparisons that might establish applicability of findings to females.

Psychopathy.—Guilty psychopaths may escape detection because they are not concerned about their misdeeds; however, this has not been convincingly established by experimental or field trial.

Intelligence.—This factor may play a role in the subject's motivation to deceive or in enhancing the probability of detection, but requires further study.

Ethnic and Group Differences.—These may affect validity but have not been studied; however, the impact of ethnic biases on the subjective interpretations made by the examiner cannot be easily excluded.

Autonomic Liability.—The possibility that some individuals may be subject to easy autonomic arousal and others to late arousal seems very likely, but the extent to which this may mislead examiners requires further study. It appears that changes in ectodermal resistance may be less subject to individual variation than cardiovascular responses.

The Test Setting

Belief in the Test.—How much credence an individual being tested places on the polygraph method may determine his decision to try to "beat the machine."

Threat of Punishment.—The more certain that a guilty response will bring serious consequences, the more likely that the outcome is valid. This is the main hypothesis that is being exploited in each polygraph study and may explain some differences between field and analogue studies.

Instrumental Activity.—There is experimental evidence that subjects aware of being recorded have more

intense responses to relevant questions, but not to control questions, than they did when they thought they were not being recorded.⁸

Test Location.—Although location of the test is generally felt to be very important, the impact upon validity of whether the test is administered in a special facility or in a room has not been determined.

Extraneous Factors

Physical Activity.—Tensing of muscles was shown to reduce the likelihood of detection from 75% to 10% in one experiment.⁹ Other investigators have not always confirmed this, but most have shown that an inconclusive result is easily provoked by such a countermeasure.

Drugs.—Meprobamate has been shown to suppress autonomic activity and facilitate deception,¹⁰ although studies utilizing diazepam or methylphenidate have not borne this out as a general finding for all anti-anxiety agents. β -Blockade has resulted in an increase in the rate of "inconclusive" tests, even though the overall error rate was not affected. Much more study of the effects of caffeine, alcohol, and psychoactive drugs is needed.

Hypnosis/Hypofeedback.—In one isolated study, both hypnosis and biofeedback groups reduced detectability of deception (after training) to less than that in a control group.¹¹ However, other studies have suggested that hypnosis is not an effective countermeasure to prevent detection.

Mindset.—Trained individuals who are familiar with the polygraph technique should be able to differentiate between relevant, irrelevant, and control questions. This would improve the possibility of "beating the polygraph test" through cognitive countermeasures. This possibility has not been adequately explored, although, in one preliminary report, subjects who have been coached and tested repeatedly are better able to avoid detection.¹²

Efforts to develop an objective computerized scoring system may have merit, but, in the opinion of most examiners, the subjective input of the examiner in the formulation of questions and in their application remains the critical point of the test as it is used today. Use of the control question technique has been well studied in criminal investigations, and its ability to detect guilt in crimes against person or property is fairly well defined. Nevertheless, false-positive and false-negative results suggest that one must always be left with some doubt in the final determination of guilt or inno-

cence. When the application is changed to preemployment screening or a security clearance, there is substantial evidence that results will not be scientifically acceptable. This is partly because of the purposes of the test, which require significant variations in the questioning techniques used—zone of comparison, POT test, and GKT. These techniques have not been studied sufficiently in the field to determine the true incidence of recognition and predictability of the test results and the success of recommended countermeasures.

SUMMARY

The polygraph instrument records a subject's blood pressure, pulse, respiration, and galvanic skin resistance. In a polygraph test, the variations in these parameters are recorded as the subject responds to a series of questions that are relevant or irrelevant to a specific issue or action under review or are control questions. When the relevant questions are focused on an alleged criminal act, this becomes the control question technique that is used in examination of a suspect criminal. It is well established that the polygraph can recognize guilty suspects with an accuracy (60% to 95%) that is better than chance. However, there is a significant rate of false-positive and false-negative determinations of deception so that the polygraph test alone can never be the sole arbiter of guilt or innocence. So far, this has been largely appreciated by the courts.

Criminal investigation has often benefited from polygraph usage because the investigator can focus on the incident in question, using it as the basis for selecting relevant and control questions in the application of the test, in the full knowledge that the detection of deception will not be absolutely accurate. Sometimes the simple threat of a "lie detector test" may facilitate the obtaining of a confession. At other times, the course of further investigation may be more easily plotted.

The use of the polygraph test in applications other than criminal investigations—for security clearance, preemployment screening, determination of paternity, periodic testing for thievery or dialysis, cheating on examinations, and the like—has never been adequately studied. In those few studies of the validity of the testing technique that have been reported on noncriminal subjects (using modifications of control question technique), a wide range of false-positive and false-negative results, similar to that found in criminal investigations, has been

reported and suggests too low a predictability for serious consideration of this application.

Aside from issues of invasion of privacy, self-incrimination, and impairment of personal dignity, it must be conceded that the polygraph test is not yet reliable enough to be the sole arbiter of guilt or innocence in a criminal trial. It has not been shown to be any more accurate when applied to personnel screening for governmental or private employers. Not only is there a significant false-positive rate, which would misclassify some innocent, truthful subjects as deceptive, but many countermeasures have been used—sometimes with reproducible success—to fool the polygraph examiner. The recent review by the OTA concluded "that there is only limited scientific evidence for establishing the validity of polygraph testing. Even where the evidence seems to indicate that polygraph testing detects deceptive subjects better than chance . . . significant error rates are possible, and examiner and examinee differences and the use of countermeasures may further affect validity."¹

CONCLUSIONS AND RECOMMENDATIONS

The Council offers the following conclusions:

1. In considering the scientific validity of polygraphy, one must consider the purpose of the test and the type of questioning technique employed. Each application must be examined individually.
2. Although the control question technique has been carefully studied in the context of a criminal investigation, where its limitations have been fairly well defined, the validity of this or other more commonly used techniques for personnel screening has not been adequately studied.
3. Those studies that may have some analogy to the use of the polygraph in personnel screening have demonstrated similar high levels of false-negative and false-positive classifications of innocent and guilty subjects that impair the use of the polygraph in criminal investigation.
4. The success of several countermeasures to prevent detection of deception has been legendary, yet serious scientific study of such countermeasures, such as tensing certain muscle groups, has been quite limited.
5. The possible savings in control of employee fraud and theft that might be accomplished by polygraph screening has not been examined in any scientifically valid study, nor has any investi-

gator adequately examined the possible impact of polygraph screening on employee morale and productivity.

6. In screening tests applied to a large work population, predictability depends on the incidence of true-positive test results in that population but also on the false-positive and false-negative test results. This means that even with a test of 95% accuracy in a population containing few guilty subjects, an unacceptable number of truly negative (truthful) subjects can be misclassified as positive (deceptive).

The Council on Scientific Affairs, in view of these conclusions, makes the following recommendations:

1. Until polygraph testing and its scoring as currently used in personnel screening can be shown to be valid with a high level of predictability, the AMA should not support the use of the polygraph in industry or in federal agencies as a preemployment test.
2. The AMA should also recommend that, when any federal agencies believe that such polygraph screening tests are both ethically acceptable and administratively necessary for security clearance, much more research than is now planned on this specific application should be supported and conducted.

References

1. Saxe I, Dougherty D, Cross T, et al: *Scientific Validity of Polygraph Testing: A Research Review and Evaluation*. US Congress technical memorandum OTA-TM-H-15. Office of Technology Assessment, November 1982.
2. Horvath F: Effect of selected variables on interpretation of polygraph records. *J Appl Psychol* 1970;65:129.
3. Barland GD, Rankin DC: *Validity and Reliability of Polygraph Examinations in Criminal Suspects*, report 75-1, contract 75-M-99-0011. National Institute of Justice, 1976.
4. Katsimantzis B, Soudis B: On the fallibility of lie detection. *Law Soc Rev* 1982;16:94-104.
5. Barland GD, cited by Saxe I, Dougherty D, Cross T, et al: *Scientific Validity of Polygraph Testing: A Research Review and Evaluation*. US Congress technical memorandum OTA-TM-H-15. Office of Technology Assessment, November 1982.
6. Horvath FS, Reid JE: Reliability of polygraph examination diagnosis of truth and deception. *Crim Law Criminol Policy Sci* 1971;23:275-281.
7. Waid WM, Cross MT, Wilson EC: Socialization, awareness and the electrodermal response to deception and self-disclosure. *J Abnorm Psychol* 1970;65:681-686.
8. Kabis JF: *Studies in Lie Detection: Computer Feasibility*, contract AF-34-620-2270, project 3294, Arlington, Va. Armed Services Technical Information Service, 1962.
9. Waid WM, Cross EC, Cook MR, et al: *Method-matrix response accuracy of physiological detection of deception*. *Science* 1981;212:71-73.
10. Coronas PPT, Lewis MD, Garner RB: *Steady-state conditioned galvanic skin response and hypnotic suppression of arousal: A pilot study of their relation to deception*. *J Forensic Sci* 1978;23:151-152.
11. Barman LL, Rankin DC, Kirscher JC: Effects of information and practice on detection of deception. abstracted. *See Psychophysiol Res* 1979;2:137-138.

Mr. MARTINEZ. Mr. Katkin?

STATEMENT OF EDWARD S. KATKIN, PH.D., CHAIR, DEPARTMENT OF PSYCHOLOGY, STATE UNIVERSITY OF NEW YORK AT STONEYBROOK, ON BEHALF OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

Mr. KATKIN. Thank you, Mr. Chairman, members of the committee.

On behalf of the American Psychological Association, an organization representing 870,000 psychologists who work as researchers and practitioners, I am pleased to appear in support of H.R. 1212. I am currently a professor of psychology at the State University of New York at Stony Brook, and also the Chairman of Executive Committee of the Council of Graduate Departments of Psychology, an organization that represents virtually all of the accredited psychology graduate degree granting programs in the United States. In addition, in 1983 I was the chairman of the Scientific Advisory Panel that oversaw the preparation of the congressional OTA report on the validity of polygraph testing.

The American Psychological Association supports the bill to prohibit the use by private employers of polygraph test for employment screening. In January 1986 our governing body, the Council of Representatives, passed a resolution which addressed the issued raised by this legislation. The Council of the APA expressed great reservations about the use of polygraph tests to test deception. The council noted that "despite many years of development of the polygraph, the scientific evidence is still unsatisfactory for the validity of psychophysiological indicators to infer deceptive behavior. Such evidence is particularly poor concerning the polygraph use in employment screening."

The heart of psychologists' concerns about polygraphy is the fact that it is a psychological test, yet its use does not conform to accepted standards for educational and psychological testing. According to the American Psychological Association's published test standards, tests should only be used when sufficient data on their reliability and validity for a particular population exist. There are no data for the validity of polygraph tests in employment screening. In such cases, polygraph tests are typically used to screen large numbers of employees for their honesty. Other than anecdotal data, we have no basis to assume such tests to valid. None of the fundamental test validity criteria are met by such applications of psychophysiological measurement techniques.

Furthermore, as Dr. Beary pointed out, there is no evidence that any physiological response pattern is associated uniquely with deception. As such, it is unlikely that a test constructed in the form of present employment screening polygraph tests can be validated. Although there is certainly legitimate research interest in polygraph testing, and there may be applications of such testing that can be validated, in the absence of such data, psychologists are ethically prohibited from employing such test methods.

Now, one major problem with polygraph testing in employment situations is that only a relatively small number of tested individuals are likely to be deceptive. Most American workers are honest