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ADA Revisited: Current Legal Pre-Employment Interviewing and Polygraph Issues and Solutions

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Abstract

The Americans With Disabilities Act of 1990 raises many legal issues with regard to conducting pre-employment polygraph examinations that are neither addressed in the law itself nor any subsequent case law. The author provides guidance and practical solutions to such issues as when to conduct examinations relative to the Conditional Offer of Employment, drug and alcohol abuse as protected disabilities, dealing with unsolicited pre-offer health information and Reasonable Accommodation as it applies to pre-employment interviewing and polygraph examinations.

In the world of federal employment laws, the Americans With Disabilities Act (ADA), which went into effect in 1991 (Americans With Disabilities Act, 1990), is one of the most recent and as a result has generated very little case law. To date, the vast majority of claims filed under this law have dealt with those portions of the law concerning access to public and private buildings (ADA, Title III). Nevertheless, there are many issues that the legislation raises that are directly applicable to pre-employment polygraph examinations and neither adequately explained in the Act nor resolved by case law. The following is an attempt to articulate these issues and suggest practical solutions for examiners conducting pre-employment interviews or polygraph examinations. These suggestions should not be constructed as legal advice and all actions contemplated from this discussion reviewed by the reader's own legal counsel.

Effectuated Employers

Exempt from the Americans with Disabilities Act are all federal employers, all wholly owned subsidiaries of federal employers, Indian tribes and IRS Code 501(c) tax-exempt organizations such as churches. However, many federal employers have voluntarily chosen to adopt the federal employment laws as internal policies. Since

many courts consider the employer's practices as well as policies, interviewers and polygraph examiners employed by federal agencies are encouraged to review their own internal procedures regarding the ADA before assuming there are no compliance requirements. It should be noted that there is no per se law enforcement exemption to the ADA.

The Conditional Job Offer

The ADA does not outlaw any pre-employment question or test that was legal prior to the implementation of the Act. Questions or tests that were legal before the ADA are still allowed. However, for some employers, the issue of when certain questions may be asked might require some changes to previous pre-employment selection practices. When in turn centers around the Conditional Job Offer [Technical Assistance Manual, 1992, 5.5(a)] which is that point in the selection process that the applicant is offered (promised) a job, conditional upon the successful completion of the remaining steps in the selection process. In the case of police applicants, this clearly should occur before the physical and before the written or oral psychologicals. Even though the polygraph instrument is a medical recording device that records physiological changes in the body which, in turn,

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are generated by psychological factors, most would agree that polygraph examinations are neither a medical nor a psychological test as intended by the law and therefore should be permissible prior to conditional offer. The problem arises when examiners try to comply with the procedures taught at polygraph schools certified by the American Polygraph Association and the APA Standards of Practice, specifically, that examiners ascertain the polygraph subject's suitability for testing prior to the examination (APA By-laws, 1999). The most straight forward method of satisfying these requirements would be to simply ask the subject directly, during the pre-test interview, if he or she was taking medication, was seeing a psychologist or physician, was in any discomfort, etc., at the time of the examination. Unfortunately, the ADA expressly states that no questions may be asked regarding the subject's past or present physical or emotional health prior to conditional job offer (Technical Assistance Manual, 5.5(a)(b). This legal condition was reaffirmed in an opinion letter to the American Polygraph Association from the legal staff of the Equal Employment Opportunity Commission (APA Newsletter, 1992), the federal agency charged with enforcing the ADA. The EEOC has gone so far as to state in writing that examiners who fulfilled their subject suitability requirements by asking "health" questions prior to conditional job offer - but did not include this information in any type of report - would still be in violation of the ADA. Ironically - and in complete contradiction to this opinion - the Department of Justice, Disability Rights Section, in their "Hiring Police Officers" manual for the ADA allows exactly this option for administrators and vendors of various drug tests (U.S. Department of Justice, Civil Rights Division, 1997). Apparently recognizing the problem of false positives and other testing errors, the EEOC allows pre-offer "health" questions for drug testing but not polygraph even though the basis for such questions is precisely the same. In a classic "Catch-22" scenario, polygraph could take its case to court since it is actually the Federal District Court that interprets the ADA, not the EEOC, but such a challenge would be costly both financially and in terms of the effects on an organization's hiring reputation. Being an EEOC test case

often has a chilling effect particularly on minority recruitment efforts.

As a temporary solution until some employer using the polygraph as part of its selection process steps forward to challenge this EEOC directive, examiners might attempt to evaluate the subject's suitability for testing using indirect verbal questioning and observation of the subject's non-verbal behavior during the pre-test. Does the subject appear coherent and lucid - capable of paying attention and processing information? Are there inordinate delays in responding to questions? Does the subject engage in facial grimaces, labored breathing, wheezing, excessive coughing or other symptoms of physical distress? Does the subject exhibit mannerisms often associated with dementia or psychiatric conditions such as talking to oneself or radical mood swings? Some examiners have opined that asking a generic question such as "Is there anything present now that you think would interfere with your ability to take this polygraph examination or interfere with your polygraph results?" would not be a direct violation of the EEOC's ADA directive though no one has obtained written confirmation from the EEOC that such questions would be permitted prior to conditional job offer. Of course, since most subjects are not knowledgeable as to what the polygraph profession considers to be an acceptable physical or emotion state, responses to these kinds of open questions are probably meaningless with regard to determining subject suitability for testing. In any case, the issue still remains: should the examiner conclude from observations, the subject's response to a generic question or some not uncommon spontaneous utterance that some unusual, possibly error causing physical or emotional health condition is present, can the examiner decline to conduct the examination, on what basis and how should this be done? Assuming the examiner has the authority to determine when to conduct or decline to conduct examinations in post-offer situations where direct health questions are permitted and asked, then examiners should follow the exact same procedure citing the observed behavior or subject's verbal statement as the basis for declining to conduct the test. If the situation is appropriate, as might be the case for a

subject with a bad cold, the examination would simply be rescheduled. Though unlikely and impractical for most examiners, if a "pre-examination" physical or psychological examination can be given in which the physician or psychologist is told what physical or mental conditions are necessary (or which would preclude testing), this costly and time consuming additional step might be employed as, in theory, it could also be used to reduce the organization's liability prior to a pre-offer physical agility test. In all of these examples, however, the hiring agency would only receive an opinion stating that the subject was in a suitable state for polygraph or the physical agility and not a report of physical or psychological health in terms of the subject's ability to perform a job.

In summary therefore, examiners have essentially four options in dealing with the ADA and determinations of the polygraph subject's suitability for testing:

1. Conduct the examination post-offer and directly question the subjects as to their physical and emotional state;
2. Conduct the examination pre-offer and use indirect verbal questions and observation of non-verbal behaviors to evaluate testing suitability;
3. Conduct the examination pre-offer but require pre-polygraph suitability physicals and psychologicals; or
4. Conduct the examination pre-offer and directly question the subjects as to their physical and emotional state but be prepared to be an EEOC test case.

It should be noted that this conflict between the EEOC's directive regarding the ADA and examiners' need to determine subjects suitability for testing only applies to pre-employment examinations and Internal Affairs cases where an employee is the polygraph subject. It is also important to remember that the EEOC is traditionally the advocate of the applicant - not a balanced arbitrating agency - and, according to the American Bar Association, loses 98% of the ADA cases it brings to court (Human Resource News, 2004). As a guiding light, if what you

want to do concurs with the EEOC's opinion as to what you can do, you can be reasonably certain you will not become a test case since it is the EEOC that would have to challenge its own interpretation of the law. If, conversely, you disagree substantively with the EEOC's position and desire to challenge the EEOC's interpretation, you have an excellent chance of prevailing but there will be significant costs.

Conditional Job Offers and Available Jobs

Though not a direct polygraph issue, many employers desire to extend conditional job offers to more candidates than exist job vacancies, the logic being that historically some applicants will fail the remaining conditional steps in the selection process (ADA Enforcement Guidance, 2004, p.18). Since this is again one of the many questions neither addressed in the law nor resolved in case law, the answer lies in one's propensity for litigation. If the employer is risk adverse, make one offer per vacancy. If the organization feels that the time, cost and hardship to the applicants that would result from a drawn out process (waiting to find out the results of each condition for each offer for each applicant before making the next offer), then the employer should make more offers than exist available openings but include an additional condition to the conditional job offer. Specifically, the employer should advise applicants that they will get the job if they are successful in the remaining selection steps and the positions aren't filled by more qualified candidates. If that in fact is the case for those candidates promised a job, these applicants should be placed on a timed eligibility list, i.e., a further promise that they will be offered the opportunity to fill any new vacancies that appear within the next six months, twelve months, etc. and agree to an additional "mini" background covering anything they may have done between the time of the conditional offer and the new vacancy.

Drugs and Alcohol

Under some very peculiar conditions, a recovering alcoholic or recovering drug addict may actually qualify as a Disabled American and therefore have redress under the ADA (Employing and Accommodation Individuals with Histories of Alcohol or Drug Abuse, 2001). As is the case with the Age in

Employment Discrimination Act and other federal employment laws, there are no law enforcement exemptions except those cited at the beginning of this article.

Throughout the law and EEOC Technical Assistance Manual, "current" users and so called experimental/social users are specifically denied accommodation (Technical Assistance Manual, 8.2) so interviewers and examiners should adamantly resist any misguided interpretation of the ADA concluding that the law prohibits pre-offer or post-offer questions about the use of alcohol or illegal drugs. Only those who choose to self-declare themselves as alcoholics and/or drug addicts and also maintain that they are "successfully rehabilitating" may seek protection under the ADA. While nowhere within the law nor the EEOC's Technical Assistance Manual are there any meaningful definitions as to what addict, alcoholic, "current user" or "successfully rehabilitating" are supposed to mean, in the absence of any case law on this point, employers (particularly law enforcement agencies) have a one time only opportunity to define these ambiguous conditions in terms they prefer - at least until some Federal District Judge decides otherwise. The EEOC Technical Assistance Manual fails to clearly indicate if merely passing a urinalysis or blood test precludes someone from being considered "current" (Technical Assistance Manual, 8.9) and most abusers are very much aware just how quickly some commonly abused drugs (cocaine, methamphetamine, etc.) are metabolized. Abusers know that simple abstinence of a few days totally defeats the detection of many substances. Unlike "for cause" situations involving current employees, applicants today can anticipate drug tests which might explain why almost none of them fail the drug detection test but 20% or more make disqualifying admissions in the polygraph pre-test or stand alone interview such as Objective Pre-employment Interviewing (International Personnel Managers Association, 1998).

As a starting point in creating a working definition of successfully rehabilitating, interviewers and examiners conducting pre-offer polygraph examinations should not ask applicants if they are addicts, alcoholics, are now or have ever been in any

kind of drug or alcohol rehab program. The logic here is not so much EEOC compliance though the EEOC prohibits these questions pre-offer (Technical Assistance Manual, 8.8) but to minimize false claims of disability. If employers don't ask applicants and employees if they're addicts or alcoholics and they don't self-declare (most true addicts and alcoholics are in denial), they can't be considered or even viewed as Disabled Americans under the language of the law. In anticipation of the extreme case of an applicant or employee who both self-declares and claims to be successfully rehabilitating, employers should create definitions that will allow them to evaluate these cases objectively and consistently yet still incorporate the organization's philosophy about substance abuse. Since most individuals involved in the selection process are not experts in the area of drug and alcohol rehabilitation, it is useful for each employer (and polygraph examiner) to review some of the published works of those that are and find an expert who's published research recommending periods of sobriety that predict relapse or recidivism rates that conform with the employer's tolerance for risk. These studies are readily available through college libraries but it will be immediately apparent that for any given substance there is no consensus among the experts as to how much abstinence is enough to turn high risk into low risk for relapse. Ironically, this confusion allows each employer to select the expert of his or her choice (at no cost since the studies have already been conducted and published) for a wide range of tolerance. Should the employer desire a very low risk standard, one could cite an expert who calls for a lengthy period of abstinence and consider adding one more condition to the definition of "successfully rehabilitating": that during this period of abstinence the applicant must not only be able to prove he or she complied with all of the rehabilitation program's requirements but can also prove that during the entire time, was substance free, i.e., participated in regular, random substance testing. While linking these two conditions (proof of length of participation and compliance testing) might preclude some unmonitored voluntary programs such as Alcoholics Anonymous, it doesn't preclude all rehab programs and it makes it more difficult for abusers to manipulate the law while

simultaneously reducing risk of harm to others should the applicant relapse. Most importantly, by creating objective standards as to how long and what conditions qualify for "successfully rehabilitating", employers are provided with a mechanism to treat applicants fairly, consistently and without discrimination. In cases where the position being sought is less sensitive or more supervised than most law enforcement positions, a more tolerant standard could be used, e.g., cite an expert who's research supports a shorter period of abstinence but keep the compliance testing requirement.

Eventually, there will be case law on this point at which time employers and polygraph examiners may have to change the standards suggested by this approach. The Exxon Corporation following the "Valdez" tragedy (IPMA News, 2000) paid out several billion dollars in damages then changed its hiring policies to prohibit the employment of any recovering drug addict or alcoholic as Tanker Captains. The EEOC promptly sued Exxon for violating the EEOC's interpretation of the ADA and as appears to be almost always the case, the Federal Court in the Fifth District ruled in favor of Exxon commenting that though the risk be small ("successfully rehabilitating"), the danger to health and safety outweighed even a small risk. Unfortunately, employment law decisions involving private corporations do not transfer directly to public sector situations but it certainly would appear that law enforcement has an even greater case when one considers the effect of drugs and alcohol on decisions involving the use of deadly force, hand/eye coordination, etc. In addition, at least one Federal Appellate Court has ruled that alcoholism per se is not necessarily a disability which in turn raises doubts about the EEOC's directive that interviewers cannot ask applicants in the pre-offer stage if they are or were alcoholics (Baily v. Georgia Pacific Corporation, 2002).

Felony Drug Possession

In many states the mere possession of certain illegal drugs is in itself a felony and since felons can't be certified as peace officers (or licensed to possess a handgun - an essential function of the police job), some Departments recommend setting up standards

that disqualify applicants not for drug use but "felonious criminal activity". While this certainly appears to be a superficially viable method to by-pass the "drug use is a disability" problem, one must remember that the ADA is a federal law and in most cases federal law will trump state law. If in fact a "successfully rehabilitating" alcoholic or addict can actually qualify as a Disabled American (the EEOC's position), most courts would dismiss the "use = felony possession = felons are uncertifiable" argument. Users are presumed possessors so if users can qualify as Disabled Americans, felony possession of the drugs they admit using will also probably be dismissed as a disqualifying activity since creating an exemption for users only to cancel it with the obvious possession associated with use is self-defeating. In addition, there appears to be a lot of variance between various states' definitions of felony possession and federal definitions all of which make the creation of uniform, objective standards difficult particularly when applied to lateral hires or out-of-state applicants. It is therefore recommended that employers and polygraph examiners establish standards based upon admitted usage of illegal drugs rather than possession standards. A more interesting question concerns the purchase, sale, manufacture and/or cultivation of illegal drugs. While not true in every case, a substantial number of addicts support their addiction by dealing. Since dealing per se is not addressed in the ADA, and not every user deals (but every user possesses), employers should track the evolution of case law on this point. One would think that these activities should be absolute and unequivocal disqualifiers for law enforcement jobs but if felony possession is waived for successfully rehabilitating user-addicts, selling during the period of addiction might also be waived since many addicts sell to support their addiction.

Health Answers to Non-health Questions

It is not uncommon, during pre-employment interviews and polygraph pre-tests for applicants to volunteer information regarding their past or present health prior to conditional offer of employment. "Why did you leave that job?" is a standard job history question and should be an acceptable question to ask any applicant pre-offer. The unresolved question is how far can an

interviewer or examiner follow-up when the applicant answers, "You mean when I had that accident at work?" The problem of pre-offer health information or discovering a disability before the ADA indicates employers should know, can occur using methods other than interviewing or polygraph. Credit record checks are not considered a "health" eliciting methodology and therefore allowed prior to conditional job offer. However, it is quite possible an employer could discover something about the applicant's physical or psychological health on the credit report. Likewise, field investigations (interviewing the applicant's life partner, parents, children, etc. at the applicant's home) could lead to the discovery of a "health" problem either by observation (medications, wheelchairs, photographs, etc.) or comments made by those being interviewed. While the EEOC indicates that employers are allowed to note such information (ADA Enforcement Guidance, 2004, p.4), there doesn't appear to be any case law indicating how far, in the pre-offer stage, interviewers can follow-up. Take, for example, the case of the pre-offer polygraph examination of a police applicant where the examiner notices that the applicant is missing digits on the hand he or she favors. Since firing a handgun is an essential function of the job but missing digits might not per se preclude the applicant from firing a handgun, employers should be allowed to take the candidate out to the range and require that he or she demonstrate the ability to perform this essential function and that all of this follow-up from the initial observation to the actual demonstration be allowed prior to conditional job offer. It might follow, therefore, that follow-up questions in the pre-offer phase tightly focused on an applicant's ability to perform essential functions of the job, albeit arising out of an answer or observation of a possible disability, could also be permissible. This, in turn, raises another issue altogether, specifically, can employers require some applicants to take tests or answer questions that all applicants for the same job do not have to undergo? While this "some but not all" subroutine appears to be a clear cut violation of Equal Treatment Under the Law constitutional guarantees (U.S. Constitution), the EEOC in its Technical Assistance Manual provides somewhat contradictory advice on successive pages. On page 5-13 (Technical Assistance Manual), employers are told "The

applicant may be asked to describe or demonstrate how s/he will perform specific job functions, if this is required of everyone applying for a job in this job category, regardless of disability." but on 5-14 states that "If an applicant has a known disability that would appear to interfere with or prevent performance of a job-related function, s/he may be asked to describe or demonstrate how this function would be performed, even if other applicants applying for the same job do not have to do so. [NOTE: Bold type as indicated in Technical Assistance Manual]. It would therefore appear, if you follow the advisement on 5-14, that a certain amount of pre-offer follow-up is permitted regarding information indicating a possible disability associated with an essential job function but it is also clear that whatever you do for one you must do for all others meeting the same precise set of conditions. Finally, while information from pre-offer follow-up tests appear to be permitted, it is still unclear if follow-up questions are permitted and pre-employment polygraph, of course, is basically an interview with a truth verification process attached.

In summary therefore, examiners have essentially three options in dealing with the ADA and following up "health" information obtained prior to conditional offer of employment:

1. Note the "health" information but make no attempt to follow-up or evaluate the information in terms of the applicant's ability to perform essential functions of the job until after job offer;
2. Note the "health" information and require the applicant to undergo a non-medical test, e.g. agility, to demonstrate the ability to perform essential functions of the job; or
3. Follow-up the information during the pre-offer polygraph examination (particularly if the same information would effect the applicant's suitability for testing) but be prepared to be an EEOC test case.

Interviewing, Polygraph and Reasonable Accommodation

Although it has yet to be reported, do not be surprised to learn that some job applicant, because of a speech or hearing disability, requests the substitution of a written questionnaire for an interview. In the same vein, an applicant with a heart or hypersensitive skin condition might insist that a CVSA is a reasonable substitute for a polygraph examination and cite the numerous law enforcement agencies that have found (anecdotally) CVSA to be an "acceptable practice in the field" of law enforcement. Examiners should argue that since non-verbal behavior makes up more than half the meaning of what people say, particularly with regard to the detection of deception, written devices are not a viable substitute for face-to-face interviews, including polygraph pre-tests, where, if nothing else, the examiner has to be certain that the applicant understands the questions. All examiners acknowledge that the basic construction of a pre-employment polygraph examination violates some of the basic tenets of specific issue test construction where reasonable degrees of validity and reliability can be demonstrated, e.g., the use of multiple issues in the same test, general or ambiguous relevant questions that appear to be more like comparison questions, the absence of any outcry, case facts or investigation evidence, etc. Most examiners agree further that certain pre-employment polygraph techniques such as Irrelevant/Relevant have inherent weaknesses corrected for in Comparison Question examinations. Nevertheless, this does not mean that pre-employment polygraph examinations, even those using the I/R Technique, have no or mere chance validity or reliability. Conversely, CVSA has yet to demonstrate any scientific validity or reliability and fares poorly when the two methodologies are objectively compared. Therefore, employers and examiners should argue that CVSA is not a reasonable substitute for polygraph. The argument that should be most effective would be that the disability or impairment prompting the request for accommodation would in and of itself be *prima facie* proof of an inability to perform an essential function of the job being sought. If an applicant, because of a disability, could not hear or speak well enough to be interviewed or

polygraphed, it would be inconceivable that they could adequately perform the required functions of any job requiring hearing or speaking. This argument, of course, would apply to all sworn positions and some civilian support positions, but other civilian positions, e.g. some types of file or records jobs, might actually require accommodation.

Language is not normally considered a Disability so examiners should not have to accommodate any police applicant by providing an interpreter. Even if the inability to speak were in fact caused by a physical disability, if speaking were an essential function, accommodation by providing someone to sign during the pre-test interview would not be necessary.

Third Party Agents and the ADA

Many pre-employment interviewers and polygraph examiners provide their services to public employers while maintaining their independent status, i.e., they are not employees of the Department requesting the examinations. However, since examiners operating under these conditions are paid by the requesting agency, they would still be considered agents of the employer and therefore bound by all the requirements of the ADA just as an independent civilian examiner conducting custodial examinations for a law enforcement agency would be required to satisfy all Miranda requirements. Even if it is not reported to the requesting agency, examiners cannot do anything or ask any questions that would violate the ADA and, in effect, must operate as if they were employees of the requesting agency. Conversely, public employers using outside vendors, are liable for any violations of the ADA incurred by their vendors and should, for liability purposes, conduct periodic quality control reviews of their vendors to ensure compliance. While the polygraph profession seems to have accepted this requirement (many examiners video tape all examinations), most psychologists conducting pre-offer psychological examinations, resist having his or her sessions randomly videotaped and refuse allowing even a qualified professional to sit in during sessions as a silent witness to monitor procedures. In any case, the employer, not just the outside vendor, would incur the liability for ADA violations so compliance and

quality control should not only be mandated checked by the employer.
for all outside vendors but periodically

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377 N.J. Super. 515 (App. Div., 2005)
Superior Court of New Jersey, Appellate Division.
STATE of New Jersey, Plaintiff-Respondent, v. Keith R. DOMICZ,
Defendant-Appellant.

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On appeal from Superior Court of New Jersey,
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No. 02-12-0206.

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Before Judges FALL, PAYNE and C.S. FISHER.

The opinion of the court was delivered by

FISHER, J.A.D.

Defendant appeals the denial of his motion to suppress evidence gathered by police during a purported consent search of his home--a search preceded by a warrantless thermal scan of that home and a warrantless search of a power company's records of the use of electricity there. Because the trial judge mistakenly failed to recognize the illegality of the prior searches or weigh their impact on the later search of the same premises, and because the trial judge erroneously excluded polygraph evidence regarding the truthfulness of defendant's claim that he did not consent to the later search, we reverse.

I

Defendant was charged with first-degree maintaining or operating a controlled dangerous substance (CDS) production facility (marijuana in an amount greater than ten plants), in violation of N.J.S.A. 2C:35-4; first-degree possession with intent to distribute CDS (marijuana in an amount greater than fifty plants), in violation of N.J.S.A. 2C:35-

5(a)(1) and N.J.S.A. 2C:35- 5(b)(10)(a); fourth-degree possession of CDS (marijuana in an amount greater than fifty grams), in violation of N.J.S.A. 2C:35-10(a)(3); and third-degree possession of CDS (methamphetamine), in violation of N.J.S.A. 2C:35- 10(a)(1).

After the trial judge denied his motion to suppress, defendant entered a plea of guilty to first-degree maintaining or operating a CDS production facility. The trial judge imposed a sentence of ten years' imprisonment, one-third of which defendant must serve before becoming eligible for parole. Monetary assessments were also imposed. Pursuant to the plea agreement, the other counts of the indictment were dismissed.

Defendant filed this appeal, [FN1] raising the following arguments:

DEFENDANT'S MOTION TO SUPPRESS THE EVIDENCE SHOULD HAVE BEEN GRANTED BECAUSE THE POLICE ENTRY INTO DEFENDANT'S HOME AND THE SEARCH OF HIS HOME VIOLATED THE UNITED STATES AND NEW JERSEY CONSTITUTIONS.

A. The Warrantless Thermal-Imaging Scan Of Defendant's Home Constituted An Unreasonable Search.

B. The Warrantless Seizure Of Defendant's Electric Bills Was Illegal.

C. Defendant's Consent to Search His Home Was Not Voluntarily And Knowingly Made.

In a supplemental brief, filed with our permission, defendant also raised the following argument:

THE LOWER COURT ERRED BY EXCLUDING POLYGRAPH EVIDENCE THAT DEFENDANT DID NOT PROVIDE CONSENT FOR THE DETECTIVES TO SEARCH HIS RESIDENCE; THEREFORE, THE DENIAL OF HIS MOTION

TO SUPPRESS THE EVIDENCE MUST BE REVERSED.

We agree that the warrantless thermal-imaging scan of defendant's Williamstown home and the warrantless seizure of utility records regarding the amount of electricity consumed in defendant's home were illegal. As a result, we reverse the judgment of conviction, vacate the denial of the motion to suppress, and remand for consideration, after a hearing, of whether defendant consented to the search of his home and, if so, whether the consent search was so impacted by the prior unlawful police conduct as to require the exclusion of the evidence then seized. We also conclude that the trial judge erred by failing to allow testimony about a polygraph test administered to defendant. And we lastly direct that a different judge be assigned to conduct all future proceedings in the trial court.

II

Defendant moved for the suppression of evidence obtained from his home on July 27, 2000. The State asserted that defendant consented to the search.

The record created at the suppression hearing revealed that, in January 2000, Detective William Peacock, lead investigator for the New Jersey State Police's Marijuana Eradication Unit, obtained information by way of subpoena that defendant had received four packages of indeterminate size and content from a nearby business that sells plant growth equipment. Why a subpoena was sought to obtain these records was not revealed at the suppression hearing.

Defendant's mere receipt of this equipment--the precise nature of which has not been revealed--led Detective Peacock to somehow suspect that defendant might be growing marijuana in his home. As a result, Detective Peacock obtained a subpoena to compel a power company to turn over records concerning defendant's residential use of electricity. The record, however, does not disclose what this information revealed. Instead, during the suppression hearing, the assistant prosecutor posed only the following questions to Detective Peacock regarding this information:

Q. Did your suspicions stem from anything else aside from the packages [of plant growth equipment] being delivered to [defendant's home]?

A. After the packages were delivered we subpoenaed the electrical usage of his residence and two comparable houses.

Q. And what was the purpose of that generally?

A. Generally to see how much electricity he was using compared to those other residences.

Q. And why did you do that and what would it tell you?

A. It would tell us if the equipment that was delivered to that residence was being used because the electrical consumption would go up.

Q. And why is that?

A. Because the specialized grow[th] equipment uses a lot of electricity.

The assistant prosecutor never asked Detective Peacock what his comparison revealed.

On cross-examination, defense counsel sought to explore the content of these electrical records as well as the manner in which they were obtained. He was permitted only a few questions before the trial judge ruled that this information had no bearing on whether defendant voluntarily consented to a search of his home. Other than his earlier examination that confirmed Detective Peacock had obtained the electrical usage records without a search warrant, the following constitutes the entirety of defense counsel's cross-examination in this area, as well as the judge's rulings that precluded further inquiry:

Q. And you said that you compared his electrical records to other houses nearby?

A. Correct.

Q. How many residents were in these other houses?

A. I don't know?

Q. Did you talk to the other occupants of the other houses?

A. No.

Q. So when you compared [defendant's] electrical records to these other houses, you didn't know how many occupants or whether there were even any occupants there; is that correct?

A. These two other houses were occupied, I just don't know by how many people.

Q. Or how often they stayed there?

A. Nor did I know about ... how many people resided [in defendant's home] either.

Q. That's correct. But with respect to the other houses you didn't know how many people were there--

THE COURT: Can we get back to the issue of consent.

[DEFENSE COUNSEL]: Okay. Well, the State brought this up. Apparently on direct--

THE COURT: No, they--

[DEFENSE COUNSEL]:--they brought out this issue of comparing these electrical records.

THE COURT: I don't know what that has to do with consent either.

[DEFENSE COUNSEL]: I quite frankly I think it goes to the totality of the circumstances and I'm glad they brought it up.

THE COURT: Yeah, okay.

[THE PROSECUTOR]: Your Honor.

THE COURT: Well, if you want to use that at trial, that's okay but let's get onto the issue of consent.

Defense counsel, in compliance with the trial judge's directive, asked no further questions regarding the electrical usage records.

As a result, the record reflects that when deciding to seek defendant's consent to a search of his home, Detective Peacock knew only that defendant obtained equipment, only identified as plant growth equipment, in January 2000; that no unusual amount of heat emanated from defendant's home when a warrantless thermal scan was conducted in May 2000 [FN2]; and that subpoenaed utility records indicated that defendant's home used electricity to some unknown extent at some unknown time. Detective Peacock conceded that this information would not support the issuance of a search warrant for defendant's home, but he felt it appropriate to speak to defendant. Consequently, Detective Peacock determined to engage defendant in a "knock and talk."

On July 27, 2000, Detective Peacock approached defendant's residence, in the early morning, [FN3] with four other law enforcement agents, all in plain clothes and all armed. They entered the curtilage of defendant's home, without consent. In fact, two officers passed through a gate that had been closed to approach the back door, while the other three officers approached the front door, as Detective Peacock described:

Q.... [I]t's a small house; is that correct?

A. Yes.

Q. So when you went up to this small house, three officers went to the front and two officers went to this rear door, is that what you've shared with us?

A. Yes.

Q. Did anybody invite you to the rear door?

A. No.

Q. Had you called [defendant] in advance to ask him if you could go on his property to the point of going to the rear door?

A. No.

Q. You had to go through a gate to get to the rear door; is that correct?

A. Correct.

Q. You didn't ask his permission to go through the gate?

A. No.

Detective Peacock acknowledged that the manner in which the officers approached to engage in this "knock and talk" was compatible with how a search warrant would have been executed, the only difference being that the officers did not have a search warrant and would not have obtained a search warrant, from an impartial judge, if sought.

In addition, contrary to Detective Peacock's testimony that he simply wanted to talk to defendant, the officer at the front door did not merely request that defendant speak with them but instead demanded that defendant speak to them:

Q. And when you first went to the property, I think you characterized Detective DiBiase as being the first to speak to [defendant]?

A. Correct.

Q. He didn't say can we speak to you?

A. No.

Q. He said we need to speak to you?

A. Yes.

[Emphasis added.]

Detective Peacock testified that all five officers then entered defendant's home through the front door and that he obtained defendant's consent, as memorialized on a consent form that defendant executed. Once in the home, according to Detective Peacock, defendant readily divulged that there were forty marijuana plants growing in the basement. The officers' subsequent search led to the discovery of over one hundred growing marijuana plants in various parts of defendant's home as well as numerous plastic

bags containing processed marijuana, and a plastic bag containing methamphetamine.

Defendant disputed Detective Peacock's version, testifying at the suppression hearing that Detective DeBiase knocked on his front door, said he had a search warrant, and promptly entered the home through the front door with two other officers. [FN4] The officers inside then let Detective Peacock and the fifth officer in through the back door. According to defendant, no one asked his permission to enter or search the home, but, instead, immediately upon entering, an officer handcuffed defendant and told him to sit on a couch in the living room, along with his girlfriend, while the officers searched the home. Only approximately one hour later was defendant asked to sign a form (the aforementioned consent form) that he was not permitted to read. Defendant testified that, when presented to him, the consent form was folded in such a way as to preclude his ability to read its contents, an issue that was explored at the hearing, when it was revealed through the testimony of a retired state police officer that the consent form in question was outdated.

In addition, defendant called a polygrapher to testify. Prior to his being sworn, the trial judge sustained the State's objection, thus precluding the polygrapher's testimony regarding the results of his examination of defendant relating to the July 27, 2000 events. Defendant also offered the polygrapher's testimony of prior consistent statements allegedly made by defendant, which the trial judge initially permitted; however, the trial judge soon thereafter sustained the State's objection that such testimony was barred by N.J.R.E. 607, a ruling defendant has not challenged on appeal.

The trial judge found Detective Peacock's version credible. He rejected defendant's argument that the consent form was folded in a way that, when presented for his signature, barred his examination of its content; found insignificant that the consent form was outdated; found Detective Peacock credibly explained why so many officers were present when the ostensible intent of the visit was to simply "knock and talk" [FN5]; found reasonable the fact that Detective Peacock

passed through a gate, entered defendant's backyard and approached the back door, because the detective believed that was the door more commonly used by the residents [FN6]; found that defendant invited the officers into his home because it was raining; found that, upon entering the home, Detective Peacock was able to detect the smell of unburnt marijuana; and found that defendant volunteered there were marijuana plants in the basement. From these facts, the trial judge concluded that defendant freely and voluntarily consented to the search of the home, and consequently denied defendant's motion to suppress.

As we have observed, the trial judge precluded defense counsel's inquiries into the legality of the warrantless search of electrical usage records and did not determine whether such a search required a warrant. While defendant attempted to assert that the prior searches were unlawful and tainted the consent allegedly given by defendant to a physical search of his home, the trial judge mistakenly failed to consider or decide those issues.

III

Contrary to the trial judge's ruling, the sufficiency of defendant's alleged consent to the search of his home on July 27, 2000 may very well have been impacted by any prior illegal searches. "The Fourth Amendment to the United States Constitution and Article I, paragraph 7 of the New Jersey Constitution require that police officers obtain a warrant before searching a person's property, unless the search falls within one of the recognized exceptions to the warrant requirement." *State v. Cassidy*, 179 N.J. 150, 159- 60, 843 A.2d 1132 (2004) (citations and internal quotation marks omitted). Our Supreme Court has emphatically cautioned that a warrantless search of a person's home "must be subjected to particularly careful scrutiny, because physical entry of the home is the chief evil" against which these constitutional precepts are directed. *Id.* at 160, 843 A.2d 1132 (citations and internal quotations omitted); see also *United States v. United States Dist. Court*, 407 U.S. 297, 313, 92 S.Ct. 2125, 2134, 32 L. Ed.2d 752, 764 (1972); *State v. Hutchins*, 116 N.J. 457, 463, 561 A.2d 1142 (1989); *State v. Bolte*, 115 N.J. 579, 584-85,

560 A.2d 644 (1989). As our Supreme Court recently said, "[t]he sanctity of one's home is among our most cherished rights." *State v. Frankel*, 179 N.J. 586, 611, 847 A.2d 561 (2004).

Here, the State argues that the search of defendant's home was based upon his free and voluntary consent. Defendant, on the other hand--besides disputing the State's version of what occurred in his home on July 27, 2000--contends that the search was tainted by prior illegal searches and seizures. Because, contrary to the trial judge's approach, evidence obtained from a consent search of a home will be excluded if it results, either directly or indirectly from illegal police conduct, we must initially consider whether the officers conducted any prior unlawful searches.

A

The record presents little information--or controversy--regarding the first known step in the investigation of defendant. We know from our review of the record only that Detective Peacock subpoenaed information that defendant purchased plant growth equipment from a business located in Williamstown. The record does not reveal what this equipment consisted of or why its purchase piqued the detective's interest, but there is no dispute that this equipment could be used to grow marijuana plants indoors. It is also conceded that it is lawful to purchase or possess such equipment and that it may be used to grow plants that may be lawfully grown. What prompted the police to compel the turnover of this information regarding defendant's purchase of plant growth equipment is not revealed by the record.

Defendant has not questioned on appeal the lawfulness of the seizure of that evidence.

B

Armed with information that defendant obtained plant growth equipment, Detective Peacock then conducted, without a warrant, a thermal scan of defendant's residence in May 2000.

On June 11, 2001, slightly more than one year later, the Supreme Court of the United States

held that thermal scanning constitutes a "search" within the meaning of the Fourth Amendment and that such a search of a home may not be conducted in the absence of a warrant. *Kyllo v. United States*, 533 U.S. 27, 121 S.Ct. 2038, 150 L. Ed.2d 94 (2001). While the State seeks our imprimatur on this warrantless search--only because *Kyllo* had yet to be decided when this search occurred--we conclude that the unlawfulness of such a search, even if not previously announced, should have been understood by law enforcement officials in New Jersey. As the *Kyllo* Court held, thermal scanings of residences represent "the search of the interior of homes--the prototypical and hence most commonly litigated area of protected privacy." *Id.* at 34, 121 S.Ct. at 2043, 150 L. Ed.2d at 102. The Court based its holding on the fact that there is

a ready criterion, with roots deep in the common law, of the minimal expectation of privacy that exists, and that is acknowledged to be reasonable. To withdraw protection of this minimum expectation would be to permit police technology to erode the privacy guaranteed by the Fourth Amendment.

>*Ibid.*]

We view *Kyllo*'s holding, even when defendant's home was thermally-scanned a year earlier, to have been predictable, because a warrantless thermal scan unreasonably intrudes into and tends to reveal, albeit in a very general way, what occurs within the interior of the home--the "chief evil" the federal and state constitutions were designed to combat. *State v. Cassidy*, *supra*, 179 N.J. at 160, 843 A.2d 1132. While such a scan, in and of itself, may reveal nothing more than the greater emanations of heat from particular areas of a structure, the Fourth Amendment's shield from unreasonable governmental intrusions into the home is not restricted to only those things some would describe as "intimate." Any physical invasion of a home, "by even a fraction of an inch," is too much. *Silverman v. United States*, 365 U.S. 505, 512, 81 S.Ct. 679, 683, 5 L. Ed.2d 734, 739 (1961). In relying upon this earlier statement in *Silverman*, the Court concluded in *Kyllo* that "all details are intimate details, because the entire area is held safe from prying

government eyes." 533 U.S. at 37, 121 S.Ct. at 2045, 150 L. Ed.2d at 104. Propelled by this view of the sanctity of the home, formed by hundreds of years of English and American law, the Court chose not to develop "a jurisprudence specifying which home activities are 'intimate' and which are not." *Id.* at 38-39, 121 S.Ct. at 2045, 150 L. Ed.2d at 105.

As can be seen, the Supreme Court has consistently maintained that technological advances notwithstanding, the Fourth Amendment's warrant requirement is triggered by any search of the home that reveals not only those activities that many would call intimate but also those circumstances hardly likely to be viewed as intimate, such as "the fact that someone left a closet light on." *Ibid.* See also *Katz v. United States*, 389 U.S. 347, 88 S.Ct. 507, 19 L. Ed.2d 576 (1967). We, thus, conclude that the Court's holding in *Kyllo*, despite the division within the Court itself, was predictable and we reject as lacking in merit the implication of the State's argument--that *Kyllo* departed from existing law and should only apply prospectively. See *State v. Burstein*, 85 N.J. 394, 403, 427 A.2d 525 (1981).

While we also recognize that, prior to *Kyllo*, a majority of courts had determined that a thermal scan of a structure from a public thoroughfare did not constitute a search, [FN7] a substantial minority had held to the contrary. [FN8] Regardless of this imbalance, our courts have interpreted the scope of rights granted by Article I, paragraph 7 of the New Jersey Constitution [FN9] more broadly than courts have interpreted the Fourth Amendment, as more fully discussed later in this opinion. This expansive quality of Article I, paragraph 7 strongly suggests that those who formulate law enforcement policy in this State would have understood, well in advance of *Kyllo*, the likelihood that to be lawful a thermal scan of a home, as conducted by Detective Peacock here, would have required the issuance of a search warrant.

C

The thermal scan in May 2000 suggested that no unusual or uncommon amount of "waste heat" was escaping from defendant's home, and, according to the record, Detective

Peacock only knew that defendant had purchased lawful plant growth equipment in January 2000. With this limited and innocuous information, Detective Peacock obtained a subpoena to compel the power company's records relating to the usage of electricity in defendant's home as well as other similarly-sized homes for comparison purposes. The State acknowledges that the police did not have probable cause to obtain a warrant for the production of these records, but nevertheless argues that such records are fair game and may be searched and seized regardless of the absence of a warrant based on probable cause because citizens have no legitimate expectation of privacy in such records.

In order for a law enforcement official's conduct to be considered a "search" that implicates the warrant requirements of the Fourth Amendment and Article I, paragraph 7, it must be shown that the accused has a legitimate expectation of privacy in the invaded place that society is prepared to recognize as reasonable. *Minnesota v. Olson*, 495 U.S. 91, 95-96, 110 S.Ct. 1684, 1687, 109 L. Ed.2d 85, 92 (1990); *State v. Stott*, 171 N.J. 343, 354, 794 A.2d 120 (2002). Defendant argues that the police obtained these electrical usage records in violation of both the federal and state constitutions. We need not resolve the federal question posed because we find that this warrantless search was prohibited by Article I, paragraph 7 of our state constitution.

In considering the reach of legitimate privacy expectations, we again observe that Article I, paragraph 7 has been interpreted more expansively than the Fourth Amendment. Divergent federal and state constitution requirements are not unusual. The federal constitution does not prohibit state constitutions from granting its citizens greater rights than allowed by the Fourth Amendment. *Cooper v. California*, 386 U.S. 58, 62, 87 S.Ct. 788, 791, 17 L. Ed.2d 730, 734 (1967).

In broadly interpreting Article I, paragraph 7, New Jersey courts "manifest no disrespect for the nation's highest court but merely honor our 'obligation to uphold [our] own constitution.'" *State v. Hemeple*, 120 N.J. 182, 197, 576 A.2d 793 (1990) (quoting Justice Pollock's concurring opinion in *State v. Lund*,

119 N.J. 35, 38, 573 A.2d 1376 (1990)). Such a departure is often, although not always, based on a particular state interest or local requirement, or other distinctions between the language of the federal and state constitutions, or the preexisting content of state law. See, for example, Justice Handler's concurring opinion in *State v. Hunt*, 91 N.J. 338, 364-68, 450 A.2d 952 (1982) and Justice Garibaldi's dissenting opinion in *State v. Hemeple*, supra, 120 N.J. at 230-31, 576 A.2d 793. However, we do not regard the absence of these "divergence criteria," expressed primarily in dissenting and concurring opinions, as otherwise requiring that we remain in mute lock-step with the federal constitution. [FN10] Ultimately, as Justice Brennan said:

[S]tate courts cannot rest when they have afforded their citizens the full protections of the federal Constitution. State constitutions, too, are a font of individual liberties, their protections often extending beyond those required by the Supreme Court's interpretation of federal law. The legal revolution which has brought federal law to the fore must not be allowed to inhibit the independent protective force of state law--for without it, the full realization of our liberties cannot be guaranteed.

[William J. Brennan, Jr., *State Constitutions and the Protections of Individual Rights*, 90 Harv. L.Rev. 489, 491 (1977).]

A comparison of the decisions of the Supreme Court of the United States in interpreting the Fourth Amendment and the decisions of our courts in interpreting Article I, paragraph 7, demonstrates that our courts have adhered to Justice Brennan's reminder that "state courts no less than federal are and ought to be the guardians of our liberties." *Ibid.* In *Hemeple*, Justice Clifford described how this State's judicial officers should certainly consider the guidance provided by the Supreme Court of the United States while, at the same time, not abandon their own conscience and reasoned judgment in honoring the oaths they too have taken:

[A]lthough th[e] [Supreme] Court may be a polestar that guides us as we navigate the New Jersey Constitution, we bear ultimate responsibility for the safe passage of our ship.

Our eyes must not be so fixed on that star that we risk the welfare of our passengers on the shoals of constitutional doctrine. In interpreting the New Jersey Constitution, we must look in front of us as well as above us.

When the United States Constitution affords our citizens less protection than does the New Jersey Constitution, we have not merely the authority to give full effect to the State protection, we have the duty to do so. Every judicial officer in New Jersey takes an oath to "support the Constitution of this State * * *." N.J.S.A. 41:2A-6. Bound to fulfill our covenant with the people of New Jersey, we must "respectfully part company" with the Supreme Court when we find that it has provided our citizens with "inadequate protection against unreasonable searches and seizures * * *."

[120 N.J. at 196 (quoting *State v. Alston*, 88 N.J. 211, 226, 440 A.2d 1311 (1981)).]

In looking above as well as in front of us, and in fulfillment of our obligation to faithfully uphold the state constitution, we conclude that Article I, paragraph 7 protects individuals from warrantless searches of a utility's records regarding the usage of electricity in an individual's home.

In examining this issue, we commence by recognizing, as Justice Sullivan observed, that the wording of Article I, paragraph 7 is "taken almost verbatim from the Fourth Amendment." *State v. Johnson*, 68 N.J. 349, 353 n. 2, 346 A.2d 66 (1975). Notwithstanding, our courts have recognized that in many instances Article I, paragraph 7 provides greater rights to an accused than the Supreme Court of the United States has found in the Fourth Amendment.

State v. Johnson marks the first step in New Jersey search and seizure jurisprudence beyond the basic rights guaranteed by the Fourth Amendment. *Ibid.* ("[U]ntil now [Article I, paragraph 7] has not been held to impose higher or different standards than those called for by the Fourth Amendment.") Two years earlier, in *Schneckloth v. Bustamonte*, 412 U.S. 218, 93 S.Ct. 2041, 36 L. Ed.2d 854 (1973), the Court held that knowledge of the right to refuse consent to a search is only one factor in determining the voluntariness of

consent. In *State v. Johnson*, the Court specifically rejected that approach in interpreting Article I, paragraph 7 and held that, in such circumstances, the State has the burden of proving by clear and positive evidence that consent was voluntarily given, including proof that the accused had knowledge of the right to refuse consent. 68 N.J. at 353-54, 346 A.2d 66. See also *State v. King*, 44 N.J. 346, 352, 209 A.2d 110 (1965); *State v. Chapman*, 332 N.J.Super. 452, 466, 753 A.2d 1179 (App.Div.2000).

Since the Supreme Court's 1975 departure from *Schneckloth*, the scope of Article I, paragraph 7 has been found to expand beyond the parameters of the Fourth Amendment in many instances. Our courts have, for example, determined that the state constitution provides an accused automatic standing to complain of an unlawful search and seizure, compare *State v. Alston*, 88 N.J. 211, 440 A.2d 1311 (1981) (retaining the former federal automatic standing rule) with *Rakas v. Illinois*, 439 U.S. 128, 99 S.Ct. 421, 58 L. Ed. 2d 387 (1978) (only those with a reasonable expectation of privacy have Fourth Amendment standing); recognizes a reasonable expectation of privacy in the telephone numbers called by an accused from his telephone, compare *State v. Hunt*, *supra*, 91 N.J. 338, 450 A.2d 952, and *State v. Mollica*, 114 N.J. 329, 554 A.2d 1315 (1989) (holding that the requirements of *Hunt* also apply to a hotel room telephone used by the accused), with *Smith v. Maryland*, 442 U.S. 735, 99 S.Ct. 2577, 61 L. Ed.2d 220 (1979); recognizes a reasonable expectation of privacy in the records maintained by a financial institution regarding an accused's bank account, compare *State v. McAllister*, 366 N.J.Super. 251, 264, 840 A.2d 967 (App.Div.), *certif. granted*, 180 N.J. 151, 849 A.2d 183 (2004) with *United States v. Miller*, 425 U.S. 435, 96 S.Ct. 1619, 48 L. Ed.2d 71 (1976); recognizes a reasonable expectation of privacy in garbage in opaque containers left at the curb for collection, compare *State v. Hempele*, 120 N.J. 182, 576 A.2d 793 (1990) with *California v. Greenwood*, 486 U.S. 35, 108 S.Ct. 1625, 100 L. Ed.2d 30 (1988); rejects the inclusion of a "good faith" exception to the exclusionary rule, compare *State v. Novembrino*, 105 N.J. 95, 519 A.2d 820 (1987) with *United States v. Leon*, 468 U.S. 897, 104 S.Ct. 3405, 82 L.

Ed.2d 677 (1984); recognizes a broader concept of seizure than does the Fourth Amendment, compare *State v. Tucker*, 136 N.J. 158, 642 A.2d 401 (1994) with *California v. Hodari D.*, 499 U.S. 621, 111 S.Ct. 1547, 113 L. Ed.2d 690 (1991); recognizes that a warrantless arrest for a motor vehicle offense does not authorize the search of a vehicle's passenger compartment, compare *State v. Pierce*, 136 N.J. 184, 642 A.2d 947 (1994) with *New York v. Belton*, 453 U.S. 454, 101 S.Ct. 2860, 69 L. Ed.2d 768 (1981); recognizes that there must be a reasonable and articulable suspicion of criminal wrongdoing as a prerequisite to requesting consent to search after a routine stop for a motor vehicle violation, compare *State v. Carty*, 170 N.J. 632, 790 A.2d 903 (2002) with *Schneekloth*, supra (imposing no such requirement for Fourth Amendment purposes); and recognizes that the State must prove by clear and convincing evidence, and not a mere preponderance of the evidence, that the police would have obtained a search warrant independent of the tainted knowledge or evidence previously obtained, compare *State v. Holland*, 176 N.J. 344, 823 A.2d 38 (2003); *State v. Sugar*, 100 N.J. 214, 495 A.2d 90 (1985) with *Murray v. United States*, 487 U.S. 533, 108 S.Ct. 2529, 101 L. Ed.2d 472 (1988); *Nix v. Williams*, 467 U.S. 431, 104 S.Ct. 2501, 81 L. Ed.2d 377 (1984).

Guided by these frequent departures from what the Court in *Hempele*, supra, 120 N.J. at 197, 576 A.2d 793, referred to as the Fourth Amendment's "floor of constitutional protection"--in guaranteeing, through the application of the state constitution, the full realization of our liberties-- we conclude, as a matter of first impression in this State, that there is a legitimate expectation of privacy in electrical usage records maintained by a power company.

In asserting that we should hold otherwise, the State poses three arguments. First, the State urges that there can be no reasonable expectation of privacy in utility records that are created by or are in the possession of a third person. Second, the State contends that these records reveal only information about the amount of "waste heat" emanating from defendant's home and not private, personal or intimate details about what has occurred

within. And third, the State asserts that the Supreme Court has found such warrantless searches of utility records to be proper in *State v. Jones*, 179 N.J. 377, 846 A.2d 569 (2004) and *State v. Sullivan*, 169 N.J. 204, 777 A.2d 60 (2001). The State's first two points are without merit because, while perhaps justified by some decisions that define the scope of the Fourth Amendment, they misconceive the manner in which our courts have interpreted Article I, paragraph 7. And, as for the third, we conclude that the State has interpreted *Jones* and *Sullivan* far more broadly than warranted by the context in which utility records are therein mentioned.

Four other courts have specifically decided the issue, three of which have held there is no legitimate expectation of privacy in such records. See *Samson v. State*, 919 P.2d 171 (Alaska Ct.App.1996); *People v. Dunkin*, 888 P.2d 305 (Colo.Ct.App.1994), cert. denied, sub nom., *Smith v. Colorado*, 515 U.S. 1105, 115 S.Ct. 2251, 132 L. Ed.2d 259 (1995); *State v. Kluss*, 125 Idaho 14, 867 P.2d 247 (Idaho Ct.App.1993). We are not persuaded by the decisions of these three courts because their determinations were based on either the Fourth Amendment or their own state constitutions, and were generated by an approach we deem inconsistent with the scope of Article I, paragraph 7. [FN11] Instead, we align our decision with *In re Maxfield*, 133 Wash.2d 332, 945 P.2d 196 (Wash.1997), the only case we are aware of that has found a reasonable expectation of privacy in such records, because Washington's search and seizure jurisprudence is far more akin to our own.

1. Is It Significant that the Electrical Usage Records Were Created and Maintained By a Third Party?

The fact that the records in question were created or are in the possession of some third person, and not the accused, is not the sine qua non for determining the scope of Article I, paragraph 7, as suggested by the State. The State's position is grounded on *United States v. Miller*, supra, 425 U.S. at 443, 96 S.Ct. at 1624, 48 L. Ed.2d at 79, where the Court held that the Fourth Amendment "does not prohibit the obtaining of information revealed to a third party and conveyed by him to government

authorities, even if the information is revealed on the assumption that it will be used only for a limited purpose and the confidence placed in the third party will not be betrayed." See also *Smith v. Maryland*, supra, 442 U.S. at 744, 99 S.Ct. at 2582, 61 L. Ed.2d at 229.

Miller's linking of the legitimate expectation of privacy with third person access to information has not been followed by our courts in staking out the boundaries of Article I, paragraph 7. For example, in *State v. Hunt*, the Court found no great significance in the fact that the telephone company and some of its employees were aware of the telephone numbers dialed by an individual. Instead, the Court held that the availability of access by others is not alone determinative of a legitimate expectation of privacy:

It is unrealistic to say that the cloak of privacy has been shed because the telephone company and some of its employees are aware of this information. Telephone calls cannot be made except through the telephone company's property and without payment to it for the service. This disclosure has been necessitated because of the nature of the instrumentality, but more significantly the disclosure has been made for a limited business purpose and not for release to other persons for other reasons. The toll billing record is a part of the privacy package.

>91 N.J. at 347, 450 A.2d 952.]

Similarly, in *State v. Hemeple*, the Court held that garbage "does not lose constitutional protection merely because it is handed over to a collector." 120 N.J. at 209, 576 A.2d 793. In *State v. McAllister*, we found a legitimate expectation of privacy in a bank's records concerning an accused's account even though the bank's employees had access to those records. 366 N.J.Super. at 264-65, 840 A.2d 967.

In each of these examples--Hunt's examination of the expectation of privacy in records regarding the telephone numbers dialed, Hemeple's discussion of one's expectation of privacy in garbage left on the curb for those authorized to collect it, and McAllister's finding of the right to privacy in financial records maintained by a banking institution--

our courts departed from the lesser scope of privacy interests recognized in the Fourth Amendment analysis contained in *Miller*. [FN12] In each of those circumstances, the courts adopted a broader scope of what information may be viewed as private in interpreting Article I, paragraph 7 that is not governed by the fact that others may have access to the information in question. Each of those courts recognized that, while relevant, the access of others to the information in question is not solely determinative of a legitimate expectation of privacy.

Of the other jurisdictions that have not found a legitimate expectation of privacy in such records, both the Idaho court in *Kluss* and the Colorado court in *Dunkin* chiefly reached their conclusions by relying upon *Miller* and the fact that the seized records were created and possessed by third persons. See *State v. Kluss*, supra, 867 P.2d at 254 ("In order to have electricity, Kluss was obliged to obtain the same from WWP [the power company]. Kluss did nothing to create the records except consume power.... The power records were maintained by WWP in the ordinary course of business."); *People v. Dunkin*, supra, 888 P.2d at 308 (expressly following *Kluss* in this regard). As observed above, this approach is not illuminating here because it is inconsistent with the manner in which our courts have construed Article I, paragraph 7 in similar circumstances. See *Hunt*, supra, 91 N.J. at 347, 450 A.2d 952; *Hemeple*, supra, 120 N.J. at 204-05, 576 A.2d 793; *MacAllister*, supra, 366 N.J.Super. at 264-65, 840 A.2d 967.

2. Do Electrical Usage Records Reveal Intimate Details of Activities Within the Home?

In further analyzing whether there is a legitimate expectation of privacy in the records in question, like *Hunt* and *Hemeple* we start from the premise that just as the telephone numbers called, and the garbage disposed of, tend to reveal what occurs within the home, so too does the usage of electricity. Indeed, much of what has been said about the illegitimacy of a warrantless thermal scan (designed to determine whether certain areas of a structure were relatively hot when compared to the rest of the home or neighboring homes) is applicable to the finding of a legitimate expectation of privacy in information

maintained by a power company as to the usage of electricity. That is--because both the Fourth Amendment and Article I, paragraph 7 possess, "[a]t the very core," the right "to retreat into [one's] own home and there be free from unreasonable governmental intrusion," *Silverman v. United States*, supra, 365 U.S. at 511, 81 S.Ct. at 683, 5 L. Ed.2d at 739; *State v. Cassidy*, supra, 179 N.J. at 160, 843 A.2d 1132--the Supreme Court rejected the government's contention that warrantless thermal scanning was constitutional because "it did not 'detect private activities occurring in private areas.' " *Kyllo*, supra, 533 U.S. at 37, 121 S.Ct. at 2045, 150 L. Ed.2d at 104. Instead, as Justice Scalia stated, in speaking for the Court, all the details that relate to what occurs within the home are intimate:

The Fourth Amendment's protection of the home has never been tied to measurement of the quality or quantity of information obtained. In *Silverman*, for example, we made clear that any physical invasion of the structure of the home, "by even a fraction of an inch," was too much[, 365 U.S. at 512, 81 S.Ct. at 683, 5 L. Ed.2d at 739,] and there is certainly no exception to the warrant requirement for the officer who barely cracks opens the front door and sees nothing but the nonintimate rug on the vestibule floor. In the home, our cases show, all details are intimate details, because the entire area is held safe from prying government eyes. Thus, in [*United States v. Karo*, 468 U.S. 705, 104 S.Ct. 3296, 82 L. Ed.2d 530 (1984)] the only thing detected was a can of ether in the home; and in *Arizona v. Hicks*, 480 U.S. 321, 107 S.Ct. 1149, 94 L. Ed.2d 347 (1987), the only thing detected by a physical search that went beyond what officers lawfully present could observe in "plain view" was the registration number of a phonograph turntable. These were intimate details because they were details of the home, just as was the detail of how warm--or even how relatively warm--*Kyllo* was heating his residence.

>Id. at 37-38, 121 S.Ct. at 2045, 150 L. Ed.2d at 104.]

As can be seen, *Kyllo*'s view of the type of information relating to activities occurring within the home that will trigger the concerns of the Fourth Amendment--namely, all of it--is

consistent with how our courts have described the reach of Article I, paragraph 7. See *State v. Frankel*, supra, 179 N.J. at 611, 847 A.2d 561; *State v. Cassidy*, supra, 179 N.J. at 159-60, 843 A.2d 1132. Indeed, the Court recently determined that locations other than the home itself could trigger those same concerns. *State v. Stott*, 171 N.J. 343, 794 A.2d 120 (2002) (a psychiatric patient's hospital room is comparable to a private living area for search and seizure purposes). This presents yet another basis for disregarding the few decisions of other jurisdictions that have found no legitimate expectation of privacy in electrical usage records.

An analysis of the Idaho and Colorado decisions cited earlier demonstrates their incompatibility with *Kyllo* in its interpretation of the Fourth Amendment and the decisions of our courts cited earlier in interpreting Article I, paragraph 7. Instead of finding that any information about what occurs within the home is subject to protection, the Idaho court in *Kluss*, quoted with approval by the Colorado court in *Dunkin*, held that there is no legitimate expectation of privacy in electrical usage records because those courts believed that such records do not identify any intimate activities of the accused:

On a comparative basis [such records] may demonstrate that the power use at the [accused's] home is greater or lesser than similar houses or at similar times or that the power use has increased or decreased at different times. The information does not provide any intimate details of [the accused's] life, identify his friends or political and business associates, nor does it provide or complete a "virtual current biography." The power records, unlike telephone or bank records, do not reveal discrete information about [the accused's] activities. High power usage may be caused by any one of numerous factors: hot tubs, arc welders, poor insulation, ceramic or pottery kilns, or indoor gardening under artificial lights.

>*Kluss*, supra, 867 P.2d at 254 (quoted with approval in *Dunkin*, supra, 888 P.2d at 308).]

As discussed in greater detail earlier, this assertion that "waste heat" does not provide intimate details of what occurs within an

accused's home does not comport with *Kyllo's* interpretation of the Fourth Amendment or our own search and seizure jurisprudence. Thus, we choose not to follow the Idaho and Colorado courts, or the different approach taken by the Alaska court in *Samson*, [FN13] but instead align our decision with that of the Supreme Court of Washington in *Maxfield*, supra, 133 Wash.2d 332, 945 P.2d 196, whose opinion bears close similarities to our Supreme Court's opinion in *Hunt*, supra, 91 N.J. at 347, 450 A.2d 952, which, in fact, is cited as authority by the Court in *Maxfield*. 945 P.2d at 200.

3. Has our Supreme Court Permitted Warrantless Searches of Utility Records in Prior Decisions?

Our conclusion as to the reasonable expectation of privacy in electrical usage records is not contrary to what the State argues has been held, at least inferentially, in *State v. Jones*, supra, and *State v. Sullivan*, supra. Those decisions dealt with the level of reliability in an informant's tip of criminal activity. In *State v. Sullivan*, the Court determined that a particular tip was reliable as to the name and location of an alleged drug dealer because, among other things, the informant's tip was corroborated by utility records that identified the owner of the premises in question. 169 N.J. at 209, 777 A.2d 60. In *State v. Jones*, 358 N.J. Super. 420, 428, 818 A.2d 392 (App.Div.2003), we alluded to this fact in distinguishing *Sullivan*, and when the Supreme Court reversed our judgment in *Jones*, it also referred extensively to the circumstances in *Sullivan* and the fact that the officer in *Sullivan* had corroborated the informant's tip by "review[ing] utility records to confirm that the telephone number provided by the informant matched the telephone number of the apartment in the multi-unit building where the controlled buys were purportedly made." 179 N.J. at 391, 846 A.2d 569. Nowhere in any of those opinions may it be ascertained by what authority the police officer was permitted to examine the utility records. Moreover, there is a distinct difference between a warrantless review of utility records to ascertain the name of an occupant of property, on the one hand, and a review of records relating to the usage of power, on the other. See *Commonwealth v.*

Duncan, 572 Pa. 438, 817 A.2d 455, 459 (Pa.2003); cf., *Hiibel v. Sixth Judicial Dist. Ct.*, 542 U.S. 177, 124 S.Ct. 2451, 159 L. Ed.2d 292 (2004). For present purposes, we need not determine whether a warrantless search of such records--for the sole purpose of identifying the owner of property--runs afoul of either the Fourth Amendment or Article I, paragraph 7. Here, the subpoena utilized by Detective Peacock compelled a greater disclosure of information than that which occurred in *Sullivan*.

4. Summary.

We conclude that there is a legitimate expectation of privacy in electrical usage records maintained by a power company that precludes the intrusion of law enforcement in the absence of a warrant. Ultimately, we find no philosophical distinction to be drawn between the purpose behind excluding evidence obtained from a warrantless thermal scan of a residence and excluding evidence derived from a warrantless search of a utility's records as to electrical usage in an accused's home. Both searches seek information as to the amount of electricity used within a home (to determine whether that use, as compared to other similarly-sized residences, might be compatible with the presence of an indoor garden). Just as there is a constitutional prohibition of warrantless searches of homes by thermal scanning devices that reveal heat emanations, we conclude there must be a constitutional prohibition of warrantless searches of utility records that reveal the amount of electricity used in a home.

As observed earlier in this regard, we find persuasive the Supreme Court of Washington's comparison to the privacy right adhering to telephone records, which is similar to, and indeed based upon, our Supreme Court's decision in *Hunt*:

Finding a privacy interest in electric consumption records is in keeping with our [prior] holdings.... [W]e [have] held that placing a pen register (which records outgoing telephone numbers) on a telephone line and obtaining long distance records from the telephone company without a warrant were unreasonable intrusions into an individual's private affairs. In reaching that conclusion, we

relied in part on the fact that "[a] telephone is a necessary component of modern life" and the necessary disclosure to the telephone company of numbers dialed does not change the caller's expectation of privacy "into an assumed risk of disclosure to the government." "This disclosure has been necessitated because of the nature of the instrumentality, but more significantly the disclosure has been made for a limited purpose and not for release to other persons for other reasons."

Those rationales also apply to electric consumption records. Electricity, even more than telephone service, is a "necessary component of modern life," pervading every aspect of an individual's business and personal life: it heats our homes, powers our appliances, and lights our nights. A requirement of receiving this service is the disclosure to the power company (and in this case an agent of the state) of one's identity and the amount of electricity being used. The nature of electrical service requires the disclosure of this information, but that disclosure is only for the limited business purpose of obtaining the service.

>Maxfield, *supra*, 945 P.2d at 200-01 (quoting not only its own prior precedents but also Hunt, *supra*, 91 N.J. at 347, 450 A.2d 952).]

We agree.

We also observe that such a determination may, at times, be affected by policy reasons. For example, in Hunt, the Court noted that "New Jersey has had an established policy of providing the utmost protection for telephonic communications," and referred to the Legislature's criminalization of wiretapping as early as 1930 in a statute since superseded by the Wiretapping and Electronic Surveillance Control Act, N.J.S.A. 2A:156A-1 to -34. 91 N.J. at 345, 450 A.2d 952. Neither party has provided us with any guidance as to the legislatively-recognized existence, or lack of existence, of an expectation of privacy in electrical usage records. Indeed, we note that the Open Public Records Act, N.J.S.A. 47:1A-1 to -13, merely begs the question by stating that "a public agency [such as a public utility] has a responsibility and an obligation to safeguard from public access a citizen's personal information with which it has been

entrusted when disclosure thereof would violate the citizen's reasonable expectation of privacy." N.J.S.A. 47:1A-1. [FN14]

In this same vein, we would lastly note that we view as incongruous the State's unsupported suggestion that members of the public may freely inspect such records in light of the fact that Detective Peacock felt the need to obtain a subpoena in order to compel their turnover.

For the reasons we have indicated, we conclude that a search warrant is required for utility records that reveal the amount of electricity used in an individual's home. Because Detective Peacock obtained such records by way of a subpoena, and not by way of a warrant issued by an impartial judge, we conclude that this search was unlawful.

IV

Having determined that the police had previously engaged in unlawful searches during their investigation of defendant, we remand for further proceedings regarding defendant's motion to suppress in order that there may be consideration of the impact of these prior constitutional violations on the State's contentions that defendant consented to the search of his home on July 27, 2000 and that the results of that search are admissible.

As is apparent, the proceedings on remand must not be limited solely to a determination as to the taint of the prior unlawful searches on the consent that the trial judge found was given. Instead, it must again be considered whether consent was given--and given voluntarily--because at the prior hearing the trial judge did not permit the full (or any) use of the prior unlawful searches nor did he consider how that unlawful conduct called into question the credibility of the State's version of the July 27, 2000 events. On remand, the judge should consider but not necessarily be limited to weighing the impact of the prior unlawful police conduct (1) on the credibility of the police version of the alleged consent search, (2) on the legitimacy of the manner in which the police sought consent, and (3) on whether the police had a reasonable suspicion that would justify seeking defendant's consent to a search of his home. In addition, even if it

is found after such an examination that defendant freely and voluntarily consented to the search of his home, the judge must also consider whether that consent was tainted by the prior unlawful conduct. We briefly expand on these points.

In weighing the circumstances eventually revealed at the future suppression hearing, the judge must first determine how the prior unlawful conduct impacts upon the credibility of the police version of what occurred on July 27, 2000. In determining whether consent was requested or given, the judge should weigh whether the prior unlawful conduct might suggest that consent was not lawfully obtained. For example, among other ways in which the credibility of the State's version may be challenged, the judge may consider whether the manner in which defendant asserted that the investigating officers effected their "knock and talk" is more believable than what the trial judge originally thought when illumined by the prior willingness of the police to engage in unlawful conduct. In other words, the judge is entitled to doubt the likelihood that the officers acted in a constitutionally permissible manner on July 27, 2000 when they did not so act on prior occasions. And while a strict application of N.J.R.E. 404(b) [FN15] might suggest the preclusion of the officers' prior wrongful acts, it is well-established that the rules of evidence do not apply at suppression hearings. N.J.R.E. 104(a). [FN16] We therefore conclude that evidence of prior unlawful searches is relevant not only to a consideration of whether the search of defendant's home constitutes the "fruit of the poisonous tree," as more fully discussed later in this opinion, but also in analyzing whether the unlawfulness of the search in question is suggested by the unlawfulness of prior searches.

Second, we similarly conclude that the trial judge mistakenly rejected the significance of the fact that the officers, by passing through a gate and entering defendant's backyard, had entered the curtilage of defendant's home without consent, without a warrant and without probable cause. While we recognize that the federal and state constitutional prohibitions on unreasonable searches and seizures do not "bar all police observation" and have "never been extended to require law

enforcement officers to shield their eyes when passing by a home," and, for example, have not been found to bar a warrantless aerial observation of a fenced-in backyard, *California v. Ciraolo*, 476 U.S. 207, 213, 106 S.Ct. 1809, 1812, 90 L. Ed.2d 210, 216 (1986), there are limits to the extent to which the police may make a warrantless entry into the curtilage of an individual's home. On remand, the judge may consider whether the warrantless intrusion by Detective Peacock and another officer into the gated backyard of defendant's property transgressed defendant's expectation of privacy and how, if unlawful, it may impact upon the credibility of the State's contention that the police acted lawfully when seeking defendant's consent to a search of his home. For instance, assuming the truth of defendant's contention that the officers entered his home from both the front and back doors, that coordinated action might provide evidence to suggest that defendant's subsequent consent to the search was coerced. See, e.g., *Wong Sun v. United States*, 371 U.S. 471, 486, 83 S.Ct. 407, 416-17, 9 L. Ed.2d 441, 454 (1963). By the same token, the judge should permit and consider any other evidence the State may seek to offer to justify the manner in which they approached defendant's home.

Third, the judge should consider whether the police had sufficient information from which to seek defendant's consent to the search of his home. To seek consent for such a search, the officers' existing, lawfully-obtained information must have been sufficient to generate a reasonable and articulable suspicion that criminal activity was occurring within. See *State v. Carty*, supra, 170 N.J. at 647, 790 A.2d 903. [FN17]

We would seriously question whether this standard could be met on the evidence presently in the record since evidence that the accused lawfully purchased legal plant growth equipment, standing alone, cannot form an adequate predicate for seeking consent based upon the Carty standard. However, because the limitations imposed upon the scope of the prior suppression hearing may have prevented the State from offering other proof that may meet this standard even in the absence of whatever the tainted searches revealed, our remand should not be viewed as barring

testimony of such other lawfully obtained evidence that might be sufficient to support a finding of a reasonable and articulable suspicion of criminal activity that would have justified a request for consent to search defendant's home.

In so describing the potential uses of this evidence, we intimate no view of how this or any other evidence should be weighed. We do, however, reject any future application of the independent source rule in this case. The application of that rule requires that the State demonstrate, by clear and convincing evidence, that "probable cause existed to conduct the challenged search without the unlawfully obtained information." *State v. Holland*, 176 N.J. 344, 360-61, 823 A.2d 38 (2003). Here, it was conceded that the police lacked probable cause to obtain a search warrant of defendant's home even with the unlawfully obtained information.

And lastly, even if the judge determines on remand that defendant freely and voluntarily gave his consent to a search of his home, and even if the judge determines on remand that the police had a reasonable and articulable suspicion to seek defendant's consent to that search notwithstanding the exclusion of the unlawfully obtained evidence, the judge must determine whether that consent search was tainted by the prior unlawful police conduct. We discern from his findings, as well as his limitation of defense counsel's cross-examination of Detective Peacock, that the trial judge viewed the law enforcement activities that preceded the alleged consent search to be irrelevant. This was mistaken.

Whether a consent search cleanses the taint of prior illegal searches and seizures is not always clear. However, there is no doubt that a mere finding that the subsequent consent was free and voluntary is not alone sufficient to avoid the impact of the "fruit of the poisonous tree" doctrine. If we were to accept the trial judge's view that defendant's purported consent rendered irrelevant the prior unlawful police conduct, we would undermine the purposes of that doctrine. Such a holding would have a tendency to allow the police to conduct illegal searches and seizures with impunity, knowing that consent might later be readily forthcoming when the accused is

confronted by police, armed with knowledge illegally obtained, and thereby absolve the police of the impact of their prior unlawful conduct. Such an approach, if adopted, would eviscerate the exclusionary rule's deterrent effect.

The Supreme Court held in *Brown v. Illinois*, 422 U.S. 590, 601, 95 S.Ct. 2254, 2260, 45 L. Ed.2d 416, 426 (1975) that the exclusionary rule is "directed at all unlawful searches and seizures, and not merely those that happen to produce incriminating material or testimony as fruits." It bars illegally-seized evidence even when obtained indirectly. *State v. Johnson*, 118 N.J. 639, 652, 573 A.2d 909 (1990). Indirectly obtained evidence is considered to be "the fruit of the poisonous tree," and may not be introduced unless it has been obtained "by means sufficiently distinguishable to be purged of the primary taint." *Wong Sun v. United States*, supra, 371 U.S. at 487-88, 83 S.Ct. at 417, 9 L. Ed.2d at 455; *State v. Johnson*, supra, 118 N.J. at 652, 573 A.2d 909.

In providing guidance to the trial court in its future examination into whether the purported consent search was "fruit of the poisonous tree," we observe that the exclusionary rule is a "judicially created remedy designed to safeguard Fourth Amendment rights generally through its deterrent effect, rather than a personal constitutional right of the party aggrieved." *United States v. Leon*, supra, 468 U.S. at 906, 104 S.Ct. at 3412, 82 L. Ed.2d at 687. Accord *State v. Johnson*, supra, 118 N.J. at 651, 573 A.2d 909 ("The purpose of the exclusionary rule is to deter police misconduct and to preserve the integrity of the courts."); *State v. Barry*, 86 N.J. 80, 87, 429 A.2d 581, cert. denied, 454 U.S. 1017, 102 S.Ct. 553, 70 L. Ed.2d 415 (1981). By generating the serious consequence of rendering relevant evidence inadmissible, the exclusionary rule seeks to deter police misconduct by encouraging "those who formulate law enforcement policies, and the officers who implement them, to incorporate Fourth Amendment ideals into their value system." *Stone v. Powell*, 428 U.S. 465, 492, 96 S.Ct. 3037, 3051, 49 L. Ed.2d 1067, 1087 (1976). We do not discount the fact that the consent search constitutes a valuable investigatory method, *Schneekloth v. Bustamonte*, supra, 412 U.S. at 228, 93 S.Ct.

at 2048, 36 L. Ed.2d at 863, and is a well-recognized exception to the warrant requirement found within the Fourth Amendment and Article I, paragraph 7, *id.* at 228, 93 S.Ct. at 2048, 36 L. Ed.2d at 863; *State v. Carty*, *supra*, 170 N.J. at 650, 790 A.2d 903. However, such a search may still fall to the requirements of the exclusionary rule when it is tainted by prior illegal police action. When the gathering of evidence through official misconduct is followed by and sufficiently linked to a search that, standing alone, appears free and voluntary, the values of legitimate police investigation are overridden by society's need to deter unlawful police conduct.

In his concurring opinion in *Brown v. Illinois*, Justice Powell explained that a "but for" rule was rejected by the Court in analyzing whether the taint of unlawful police conduct bars the use of its fruit because it was recognized "that in some circumstances strict adherence to the Fourth Amendment exclusionary rule imposes greater cost on the legitimate demands of law enforcement than can be justified by the rule's deterrent purposes." 422 U.S. at 608-09, 95 S.Ct. at 2264, 45 L. Ed.2d at 430. Thus, in considering the totality of the circumstances, and upon a careful weighing of all relevant evidence, a fact-finder may conclude that the taint of the illegal searches has become attenuated. *Brown*, *supra*, 422 U.S. at 602-03, 95 S.Ct. at 2261, 45 L. Ed.2d at 426-27; *State v. Carty*, *supra*, 170 N.J. at 651, 790 A.2d 903; *State v. Barry*, *supra*, 86 N.J. at 87, 429 A.2d 581. While its facts and circumstances are distinguishable, *Brown v. Illinois* demonstrates that subsequent consent to a search alone is insufficient to remove the taint of a prior constitutional violation, and instead should be examined as one part of an amalgam of circumstances to be weighed in determining whether the evidence obtained from the consent search may be viewed as untethered to the prior unlawful conduct. 422 U.S. at 603-04, 95 S.Ct. at 2261-62, 45 L. Ed.2d at 427. Among the factors that should be weighed in determining whether the evidence has been obtained by means that are "sufficiently independent to dissipate the taint" of the unlawful police conduct, are:

(1) the temporal proximity between the illegal conduct and the challenged evidence; (2) the presence of intervening circumstances; and (3)

the flagrancy and purpose of the police misconduct.

>*State v. Johnson*, *supra*, 118 N.J. at 653, 573 A.2d 909 (citing *Brown v. Illinois*, *supra*, 422 U.S. at 603-04, 95 S.Ct. at 2261-62, 45 L. Ed.2d at 427).]

This analysis is fact-sensitive, *Brown v. Illinois*, *supra*, 422 U.S. at 604 n. 10, 95 S.Ct. at 2262 n. 10, 45 L. Ed.2d at 427 n. 10; *State v. Johnson*, *supra*, 118 N.J. at 653, 573 A.2d 909, and is often relegated to "the learning, good sense, fairness and courage" of trial judges, *Nardone v. United States*, 308 U.S. 338, 342, 60 S.Ct. 266, 268, 84 L. Ed. 307, 312 (1939). The extent to which our courts may distinguish between what is or is not attenuated is not entirely clear beyond these general guidelines. There are no available bright lines. We would observe, however, that our Supreme Court recently recognized that a consent search could remain tainted by prior unlawful police conduct "notwithstanding that [defendant] consulted with an attorney prior to consenting." *State v. Cassidy*, *supra*, 179 N.J. at 164, 843 A.2d 1132. See also *State v. Johnson*, *supra*, 118 N.J. at 658, 573 A.2d 909 (where the Court held that the intervening events in that case were "repeated violations of defendant's constitutional rights" that "did not break, but rather forged, the chain of causation").

V

In his supplemental brief, defendant argues that the trial judge erred by barring testimony about the results of a polygraph examination performed on defendant, including, we suppose, the expert's opinion that defendant's contention that he did not consent to the search was truthful. In this regard, the following occurred at the hearing:

THE COURT: Any other witnesses ... ?

[DEFENSE COUNSEL]: Yes, I would like to call Allen Hart please.

[ASSISTANT PROSECUTOR]: Your Honor, I believe we're going to need to have a motion with respect to Mr. Hart's testimony.

THE COURT: Mr. Hart is a pol[y]grapher?

[DEFENSE COUNSEL]: Yes, sir ... [,] he performed a polygraph on [defendant].

THE COURT: And determined what?

[DEFENSE COUNSEL]: And he determined that he was truthful in what he said, that--

THE COURT: Doesn't that call for the ultimate question? Isn't the finder of fact at this proceeding to make that determination?

[DEFENSE COUNSEL]: It calls for a significant statement towards the ultimate fact, I agree but this is a Rule 104 Hearing. As we set forth in our brief, the Rules of Evidence don't apply. All of the authorities that the State has cited in support of their position are cases that say that polygraph evidence is not admissible before the jury. The court sitting by itself in a Rule 104 Hearing without a jury with relaxed evidence procedures can determine what weight if anything it's going to give to a polygraph exam.

THE COURT: Well, I'm certainly not going to take the time,... I don't think it's relevant to anything being determined as to the ultimate issue of credibility at this point. It's not his function. It's my function.

[DEFENSE COUNSEL]: He's not talking about credibility, he's talking about the results of a polygraph test that this court would weigh into--weigh into evidence.

THE COURT: I'm not going to weigh into evidence. It wouldn't be admissible in any event. I'm going to deny your application.

As can be seen, the trial judge summarily refused to permit this testimony because he considered it irrelevant ("I don't think it's relevant to anything being determined ..."), and ultimately inadmissible ("It wouldn't be admissible in any event"). The judge also ruled that this testimony encroached upon the ultimate issue to be decided ("the ultimate issue of credibility [is] not his function ... [i]t's my function"), and that it constituted a waste of time ("I'm certainly not going to take the time ..."). We conclude that these four reasons given by the trial judge were insufficient to justify the exclusion of this testimony.

A

The determination that this evidence was irrelevant was based upon a mistaken view of the rules of evidence. N.J.R.E. 401 defines "relevant evidence" as "evidence having a tendency in reason to prove or disprove any fact of consequence to the determination of the action." The judge was required, in part, to determine whether defendant consented to the search of his home, which turned on the "swearing contest" between Detective Peacock and defendant about what actually occurred on July 27, 2000. Since the polygraph testimony related, no matter how imperfectly, to the truthfulness of defendant's version, it comported with N.J.R.E. 401's broad standard of what is relevant. See *United States v. Posado*, 57 F.3d 428, 433 (5th Cir.1995).

B

The trial judge also summarily excluded the polygraph testimony because he believed it was inadmissible. This was also erroneous. In *State v. McDavitt*, 62 N.J. 36, 46, 297 A.2d 849 (1972), the Court held that polygraph testing had developed to such a point of reliability that the results could be admitted into evidence in a criminal matter if both the State and defendant so stipulated. In reaching this determination, the McDavitt Court took judicial notice "of the fact that polygraph testing is used extensively by police and law enforcement agencies, government agencies and private industry for investigative purposes." *Id.* at 45, 297 A.2d 849. The Court explained that polygraph evidence "has probative value to warrant admission" under the stipulation circumstances it outlined and cautioned that juries should be carefully instructed that:

It is not direct proof of a defendant's guilt or innocence of the crime charged. It is opinion evidence by an expert and tends only to indicate whether or not the subject was telling the truth when tested. It is for the jury to decide what weight and effect such evidence should be given.

>*Id.* at 47, 297 A.2d 849.]

See also *State v. Carter*, 91 N.J. 86, 116, 449 A.2d 1280 (1982); *State v. Castagna*, 376

N.J.Super. 323, 870 A.2d 653 (App.Div.2005); State v. Reyes, 237 N.J.Super. 250, 567 A.2d 287 (App.Div.1989); State v. Capone, 215 N.J.Super. 497, 522 A.2d 451 (App.Div.1987). These decisions, while limiting the admissibility of such evidence, recognize that polygraph testing has some probative value and, thus, the trial judge's contrary view was erroneous.

Polygraph testing is designed to demonstrate that the person tested was or was not truthful in answering certain questions based upon measured changes in blood pressure, pulse, thoracic and abdominal respiration, and galvanic skin response. The polygraph as a device for detecting truthfulness is based upon the assumption that changes in these physical conditions indicate an increase in stress consistent with deception. See, e.g., United States v. Piccinonna, 885 F.2d 1529, 1538 (11th Cir.1989) (Johnson, J., concurring in part and dissenting in part). We conclude that in a non-jury setting the admission of this type of evidence, when a proper foundation has been laid, is not limited by McDavitt's stipulation requirement.

In weighing the admissibility of such evidence in the present circumstances, our judicial system recognizes that cases are already adjudicated through the use of "lie detectors." We principally believe--and for good reason--that the truth may be determined and lies detected in the crucible of a trial where testimony is given under oath and subjected to cross-examination. We also believe that lies may be detected through a fact-finder's use of common sense in judging the logic and sense of what a witness has said and the manner in which the witness has said it. That is, it is well-established that a fact-finder is permitted to assess the credibility of a witness not only through the sense or logic of what has been said under oath--on the assumption that the witness will speak the truth either through fear of criminal prosecution, N.J.S.A. 2C:28-1 and 2, or moral compulsion--but also through an assessment of the witness's demeanor. See Model Jury Charges (Civil), § 1.12K (1998) (the fact-finder may consider, among other things, "the witness' demeanor on the stand; the witness' candor or evasion; the witness' willingness or reluctance to answer"). If we are to allow a fact-finder to detect whether a

witness is lying or telling the truth based on observations of demeanor--thus permitting the fact-finder to consider among many other things whether, while testifying, the witness breathed heavily, perspired, spoke haltingly, avoided eye contact, gestured excessively, or gave off the unpleasant "odor of mendacity" [FN18]--then it should follow that measurable physiological occurrences during the answering of questions, such as changes in pulse rate, blood pressure, respiration or perspiration, may be probative of a witness's credibility.

In so viewing the information that polygraph evidence may provide, we must consider whether McDavitt requires the exclusion of such evidence. In McDavitt, the Court outlined the circumstances in which polygraph evidence may be used, indicating that in a criminal case the parties must stipulate to its admission. Here, while the parties did not enter into such a stipulation, the circumstances are distinguishable from McDavitt, chiefly because McDavitt considered the use of polygraph evidence at a trial, before a jury, to determine defendant's guilt. Thus, in weighing the applicability of this stipulation requirement, we have recognized and stressed that McDavitt dealt with the admissibility of such evidence when the fact-finder is a jury. See Castagna, *supra*, 376 N.J.Super. at 352, 870 A.2d 653 (emphasis added) ("[U]ntil our Supreme Court says otherwise, the only way to bring directly before a jury the results of a polygraph test is for the parties to stipulate to its admissibility."). We have not, however, previously considered whether McDavitt's stipulation requirement should apply to limit the use of polygraph evidence when the judge is required to find facts at a suppression hearing.

Here, the motion to suppress was for the trial judge to decide based upon his--and not a jury's--determination of the facts. In such a circumstance, as defendant correctly urges, "the judge shall not apply the rules of evidence except for Rule 403 or a valid claim of privilege." N.J.R.E. 104(a). The concern expressed in prior decisions has been that, until some definitive proof demonstrates the greater reliability of the polygraph technique, a jury may tend to be confused or misled by its admission. This concern, however, is not

presented when the judge is the fact-finder. Instead, in such circumstances, the rules of evidence have a less rigid application. Accordingly, while the Supreme Court has placed limits on the use of such evidence, we conclude that the stipulation requirement of McDavitt governs when the fact-finder is a jury and that polygraph evidence may be admitted, in the absence of a stipulation, at a suppression hearing where the judge is the fact-finder. *United States v. Posado*, supra, 57 F.3d at 435. As a result, polygraph evidence may be admitted at a suppression hearing, even in the absence of the consent of the State, when credibility is an issue. [FN19] The judge may give that testimony such weight as it warrants, but the extent to which the judge values that evidence should not determine its admissibility.

C

The trial judge was also mistaken in holding that the polygrapher's testimony usurped his function as the fact-finder because it embraced the ultimate issue. See N.J.R.E. 704 ("Testimony in the form of an opinion or inference otherwise admissible is not objectionable because it embraces an ultimate issue to be decided by the trier of fact."); *State v. Summers*, 176 N.J. 306, 312, 823 A.2d 15 (2003); *Jacober v. St. Peter's Med. Ctr.*, 128 N.J. 475, 497, 608 A.2d 304 (1992).

D

Lastly, we observe that the trial judge appears to have precluded the polygrapher's testimony because he believed it would constitute a waste of time. Certainly, the trial judge has the discretion to exclude relevant evidence "if its probative value is substantially outweighed by the risk of ... [it being a] waste of time." N.J.R.E. 403(b).

Some of the judge's comments suggest that he viewed this evidence as a "waste of time" because he believed the testimony was inadmissible. That conclusion was incorrect and, in actuality, did not result from the balancing process required by N.J.R.E. 403(b).

To the extent that the judge's holding in this regard could be viewed as being based on N.J.R.E. 403(b), we would also reject it. The

record gives no cause to believe that the polygrapher's testimony, and any rebuttal the State may have wished to offer, would have been so time consuming as to outweigh the testimony's probative value. The judge did not inquire as to how long the examination of the polygrapher would take. Nor did the judge inquire whether the State would offer any rebuttal or how long that rebuttal would take. Absent such information, the trial judge was in no position to consider whether the "waste of time" aspect of N.J.R.E. 403 was implicated and, thus, his preclusion of this evidence on that basis constituted an abuse of discretion.

E

For these reasons, we hold only that the admissibility of this evidence should not have been barred for any of the reasons asserted by the trial judge. Our discussion of the judge's ruling, therefore, should not be interpreted as foreclosing a renewal of a N.J.R.E. 403 objection to the polygraph testimony on a more complete record. In addition, we know nothing of this polygrapher's qualifications, the content of his proposed direct testimony, or how the State's voir dire or cross-examination of the polygrapher might impact upon the admissibility or persuasiveness of his testimony, and can therefore neither offer nor intimate any view as to whether this polygrapher possessed valid qualifications or how the trial judge should weigh this evidence if it is ultimately admitted.

In short, we decide what has been presented and conclude only that the trial judge's reasons for excluding defendant's polygraph evidence were erroneous.

VI

For these reasons, we vacate the judgment of conviction, vacate the order denying defendant's motion to suppress, and remand for further proceedings in conformity with this opinion.

We are also constrained, in light of the trial judge's prior expressions regarding the credibility of the witnesses, to direct that the matter be heard by another judge. In so holding, we intend no denigration of the experienced trial judge, but conclude that his

prior findings, substantially based on his view of the credibility of the witnesses, have placed him in the uncomfortable position that R. 1:12-1(d) was designed to avoid. See N.J. Div. of Youth & Fam. Serv. v. A.W., 103 N.J. 591, 617-18, 512 A.2d 438 (1986) ("Because the trial judge has heard this evidence and may have a commitment to its findings, we believe it is best that the case be reconsidered by a new fact-finder."); In re Guardianship of R., G. and F., 155 N.J.Super. 186, 195, 382 A.2d 654 (App.Div.1977) ("The [termination of parental rights] case should be assigned to a new judge [because] [t]he judge who heard the matter below has already engaged in weighing the evidence and has rendered a conclusion on the credibility of the Division's witnesses."); see also State v. Gomez, 341 N.J.Super. 560, 579, 775 A.2d 645 (App.Div.), certif. denied, 170 N.J. 86, 784 A.2d 719 (2001). The Assignment Judge of the vicinage should forthwith assign a different judge to conduct all further proceedings in this matter.

Reversed and remanded.

FN1. We observe that defendant indicated his waiver of a right to appeal as part of the plea agreement. Notwithstanding, defendant filed this appeal and the State has not argued that it should be dismissed. Accordingly, we conclude that the State waived its right to assert defendant's waiver as a basis for our rejecting his appeal.

FN2. This date is suggested only by Detective Peacock's testimony that he performed the thermal scan "over two months" prior to defendant's arrest.

FN3. Defendant testified that the officers arrived "[e]arly morning, 7:00, 8:00 o'clock." The State provided no evidence as to the time of the officers' arrival nor did the State attempt to rebut defendant's testimony in this regard.

FN4. Neither Detective DeBiase nor any of these other officers testified at the hearing.

FN5. Detective Peacock testified that he normally coordinates such investigations with local officials.

FN6. This explanation does not explain why the other three officers approached and knocked on the front door.

FN7. United States v. Ishmael, 48 F.3d 850 (5th Cir.1995); United States v. Myers, 46 F.3d 668 (7th Cir.1995); United States v. Pinson, 24 F.3d 1056 (8th Cir.1994); United States v. Ford, 34 F.3d 992 (11th Cir.1994); State v. Cramer, 174 Ariz. 522, 851 P.2d 147 (Ariz.Ct.App.1992); LaFollette v. Commonwealth, 915 S.W.2d 747 (Ky.1996); State v. Niel, 671 So.2d 1111 (La.Ct.App.1996); State v. McKee, 181 Wis.2d 354, 510 N.W.2d 807 (Wis.Ct.App.1993).

FN8. United States v. Cusumano, 67 F.3d 1497 (10th Cir.1995), vacated on other grounds, 83 F.3d 1247 (10th Cir.1996); People v. Deutsch, 44 Cal.App.4th 1224, 52 Cal.Rptr.2d 366 (Cal.App.1996); State v. Siegal, 281 Mont. 250, 934 P.2d 176 (Mont.1997), overruled on other grounds, State v. Kuneff, 291 Mont. 474, 970 P.2d 556 (Mont.1998); Commonwealth v. Gindlesperger, 560 Pa. 222, 743 A.2d 898 (Pa.1999); State v. Young, 123 Wash.2d 173, 867 P.2d 593 (Wash.1994).

FN9. Our state constitution provides: "The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated; and no warrant shall issue except upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched and the papers and things to be seized." N.J. Const., Article I, paragraph 7.

FN10. In his concurring opinion in Hunt, Justice Pashman observed that state courts, "if not discouraged from independent constitutional analysis, can serve, in Justice Brandeis' words, 'as a laboratory' testing competing interpretations of constitutional concepts that may better serve the people of those states. In our federal system, there is strength in diversity and competition of ideas." 91 N.J. at 356-57, 450 A.2d 952 (quoting New State Ice Co. v. Liebmann, 285 U.S. 262, 310-11, 52 S.Ct. 371, 386, 76 L. Ed. 747, 771 (1931)(Brandeis, J., dissenting)). See also Note, Developments in the Law--The Interpretation of State Constitutional Rights, 95 Harv. L.Rev.

1324, 1396 (1982) ("Rather than threaten the federal system, such a process is more likely to create a healthy debate over the interpretation of federal law.").

FN11. The issue has been inconclusively discussed by other courts. In *Commonwealth v. Duncan*, 752 A.2d 404, 412 n. 6 (Pa.Super.2000), the court declined to consider the issue but indicated that the Pennsylvania Supreme Court had found a reasonable expectation of privacy in the heat escaping from one's home, see *Commonwealth v. Gindlesperger*, 560 Pa. 222, 743 A.2d 898 (1999), and cited the one known decision that found an expectation of privacy in utility records, suggesting perhaps an inclination toward finding a legitimate expectation of privacy in such records. That decision was affirmed, but on other grounds. 817 A.2d 455 (Pa.2003). In *State v. Mordowanec*, 259 Conn. 94, 788 A.2d 48, 56 n. 11 (Conn.2002), the court stated that defendant had failed to raise the issue in the trial court, but concluded in dictum that *United States v. Miller*, supra, 425 U.S. 435, 96 S.Ct. 1619, 48 L. Ed.2d 71, was dispositive. See also the three opinions in *United States v. Porco*, 842 F.Supp. 1393, 1398 (D.Wyo.1994), aff'd on other grounds, sub nom., *United States v. Cusumano*, 67 F.3d 1497 (10th Cir.1995), vacated, 83 F.3d 1247 (10th Cir.1996) (en banc). The district judge determined that an affidavit submitted to a magistrate for issuance of a search warrant provided a substantial basis for concluding that probable cause existed for a search of defendant's home. Included within that affidavit were the results of a thermal scan and information derived from a utility company's electrical usage records for that residence. In considering this issue, the district judge held that a thermal scan was not a search protected by the Fourth Amendment and that defendants had no expectation of privacy in electrical usage records. 842 F.Supp. at 1398. On appeal, the panel never discussed the latter point, holding instead that the thermal scan was a search that required a warrant and, thus, information derived from that warrantless scan could not be considered in determining whether probable cause existed for a search of the residence. 67 F.3d at 1502-07. The entire court granting rehearing en banc, vacated the panel's decision reported at 67 F.3d 1497, but chose not to determine

whether a warrant is required for a thermal scan, 83 F.3d at 1250, and never mentioned the electrical usage records; instead, the majority of the en banc court held that there was sufficient other evidence to support a finding of probable cause and affirmed the district court's denial of defendants' suppression motion.

FN12. Indeed, the State's brief trumpets this point on the assumption that our courts would follow *United States v. Miller*, without citing *McAllister*, where we rejected *Miller*'s approach in interpreting Article I, paragraph 7. See also the insightful and persuasive criticism of *Miller* in 1 LaFave, *Search and Seizure* § 2.7(c) (4th ed., 2004) ("Despite the fact that the volume and personal nature of [banking] information is such that access by government agents unrestrained by constitutional limitations would seem to constitute a devastating intrusion into privacy, courts have not been receptive to the assertion that the subjects of this information are at all protected by the Fourth Amendment against this kind of surveillance. In light of the unfortunate decision of the Supreme Court in *United States v. Miller*, they are even less likely to accept such a contention.").

FN13. The Alaska court concluded that the defendant did not have standing to seek suppression of the utility records. See *Samson v. State*, supra, 919 P.2d at 174 (concurring opinion of Mannheim, J., which contains the majority's resolution of this issue) ("Because these records were compiled and kept by Golden Valley Electric, and because the records were seized from the electric company's premises, Golden Valley clearly would be entitled to seek suppression of this evidence if the government ever attempted to use these records in a criminal prosecution of the electric company. But *Samson* is in a different legal position because, normally, a person has no standing to seek suppression of evidence belonging to and illegally seized from someone else."). This view of standing may perhaps be consistent with the federal approach, see *Rakas v. Illinois*, supra, 439 U.S. 128, 99 S.Ct. 421, 58 L. Ed.2d 387, but is entirely inconsistent with the concept of standing adopted by our Supreme Court in such matters, see *State v. Alston*, supra, 88 N.J. at 211, 440 A.2d 1311.

FN14. We are aware of no other legislative enactments that would shed any clear light on this subject, although the legislative history relating to a recent enactment seems to suggest that such utility records are considered confidential by public utilities. In seeking to "lower the current high cost of energy," N.J.S.A. 48:3-50, the Legislature adopted in 1999 the Electric Discount and Energy Competition Act, N.J.S.A. 48:3- 49 to - 98. This Act which, among other things, authorized government aggregation in the energy marketplace, was amended in 2003. In the Assembly Appropriations Committee Statement relating to that amendment, it was reported that the bill "remove[d] a requirement that the consent of an energy customer to disclose the customer's name, address and the current energy company from which the customer purchases electricity, gas or both be in writing, and further allows that disclosure, without the customer's consent, to electric power or gas suppliers (including energy marketers and brokers), energy agents, or municipal governments acting as energy purchasing aggregators, for the purpose of entering into municipal energy aggregation contracts. That information disclosed without consent shall be used only for the provision of electric generation service, gas supply service, or related electric or gas services to that customer." N.J.S.A. 48:3-93.1, Assembly Appropriations Committee Statement to L. 2003, c. 24. We infer from this that, in the absence of a customer's written consent, there is a limited scope of information that may be provided (name, address and current energy company) for a limited purpose ("only for the provision of electric generation service, gas supply service, or related electric or gas services to that customer"). This suggests that other information may not be disclosed or revealed absent customer consent.

FN15. This rule states in part that evidence of prior wrongs, although admissible for other purposes, "is not admissible to prove the disposition of a person in order to show that he acted in conformity therewith."

FN16. N.J.R.E. 104(a) states that "[w]hen ... the admissibility of evidence ... is in issue, that issue is to be determined by the judge. In making that determination the judge shall not apply the rules of evidence except for Rule 403 or a valid claim of privilege" (emphasis added). Accordingly, N.J.R.E. 404(b) does not bar the admission of such evidence at a suppression hearing unless N.J.R.E. 403 requires its exclusion.

FN17. While Carty dealt with the consent to search a motor vehicle, we would conclude that it would be incongruous to view Carty as being limited to motor vehicles since intrusion into the privacy of the home is "the chief evil" that the Fourth Amendment and Article I, paragraph 7 were designed to prevent. The State should not have a greater lawful ability to seek consent to search a home than it has in seeking consent to search a motor vehicle.

FN18. Williams, *Cat On A Hot Tin Roof*, Act III (1955).

FN19. We recognize the possibility that our ruling in this regard could turn some suppression hearings, where credibility is a central issue, into battles between polygraphers. In some matters, the State may have its own witness submit to a polygraph examination and offer similar testimony as to the truthfulness of the State's contentions. While that issue has not been presented, we would think the State would be entitled to offer the same type of evidence as the defendant.

**United States District Court
Eastern District of Washington**

**United States of America, Plaintiff, V. Rafael Davila, and
Deborah Cummings, Nos. Cr-03-021-Rhw, Cr-03-022-Rhw, Order
Denying The Government's Motion in Limine in Opposition to the
Admission of Polygraph Evidence**

A pretrial hearing was held on March 23, 24, and 28, 2005. A number of motions were before the Court. These motions were addressed in a separate order. This order will address the Government's Motion in Limine in Opposition to the Admission of Polygraph Evidence.

Background

Defendants are charged with various crimes dealing with the unauthorized retention and disclosure of classified information, in violation of 18 U.S.C. §§ 793(e) and 798(a). Defendant Davila served as an officer in the Army Reserves, at Fort Lewis, Washington. While at Fort Lewis, he had access to classified documents. He retired from the military in 1999. Prior to his retirement, Defendant Davila married Defendant Cummings. They were later divorced.

This case started when Defendant Cummings contacted the FBI and alleged that her ex-husband had taken classified documents from Fort Lewis and placed them in a storage locker. The FBI began investigating these allegations by interviewing Defendant Cummings numerous times, as well as interviewing Defendant Davila. No classified documents were ever found after the interviews, nor were any classified documents found in the storage locker. The internal records at Fort Lewis did not show that any particular classified records were missing.

The Government tried to determine which documents may have been taken, based on descriptions of the documents made by both Defendants during questioning, and is attempting to recreate the documents based on the general descriptions given by the Defendants. The significance of the offenses

charged depend on the content of the documents, and the content of the documents is derived from the Defendants' statements. Accordingly, the Defendants' statements are crucial to the Government's case-in-chief. These Statements provide the underlying foundation for the Government's case and are the basis for determining the specific crimes charged. It is from this context that the Court addresses the Government's Motion in Limine.

Analysis

The Government, in anticipation of Defendant's attempt to introduce the results of the polygraph examination, asks the Court to exclude the results of the examination for three reasons: first, evidence of polygraph examinations invades the province of the jury, while posing the danger of being prejudicial; second, polygraph examinations do not constitute reliable scientific knowledge; and third, in this case, the proposed polygraph expert would be testifying as to the mental state of the Defendant, in violation of Fed. R. Evid. 704(b).

Defendant was interviewed in January 2000. During the interview, he was asked whether he would take a polygraph test, to which he agreed. He returned to the FBI offices in Boise, Idaho, in February 2000 and was given a polygraph examination. Trace Kirk administered the examination. Mr. Kirk was trained at the Department of Defense Polygraph Institute. At the time of Defendant's examination, Mr. Kirk was the polygraph examiner for Idaho, Montana, Oregon, and Utah.

Mr. Kirk asked Defendant the following questions during the polygraph examination:

No.	Question	Answer
1	Is your last name Davila?	Y
1a	Is your first name Rafael?	Y
1b	Were you born in Texas?	Y
1c	Do you now live in Idaho?	Y
2	Are you going to tell me the complete truth today?	Y
3	Are you concerned that I will ask you a question we have not reviewed?	N
4C	During your active duty military service did you ever intentionally disregard a direct order?	N
5R	Did you ever intentionally store at home highly classified documents?	N
6C	Prior to your relationship to Deborah, did you ever lie to purposefully get an innocent person in trouble?	N
7R	Did you arrange to have those documents sent?	N

Mr. Kirk concluded that Defendant did not show signs of deception in answering these questions. Generally, federal courts have been reluctant to admit polygraph evaluations into evidence. *See, e.g., United States v. Scheffer*, 523 U.S. 303 (1998); *United States v. Ramirez-Robles*, 386 F.3d 1234 (9th Cir. 2004); *United States v. Booth*, 309 F.3d 566 (9th Cir. 2002); *United States v. Benavidez-Benavidez*, 2 17 F.3d 720 (9th Cir. 2000); *United States v. Cordoba*, 194 F.3d 1053, 1057-58 (9th Cir. 1999); *but see United States v. Crumby*, 895 F. Supp. 1354 (D. Ariz. 1995) (admitting polygraph evidence only to impeach or corroborate the credibility of the defendant if he took the stand, testified that he did not commit the crime, and was impeached).

In reviewing the facts in this case, it appears that there are two purposes for which evidence of the polygraph evidence could be admitted. First, such evidence could be relevant to Defendant's state of mind when he signed his statements. Second, the evidence could be used to show that Defendant did not knowingly and intentionally store highly-classified documents in his home.

With regard to the first purpose, the Court has no trouble admitting evidence of the questions asked and that Defendant was told that he passed the polygraph examination prior to signing the statement that had been prepared for him to sign. Such information would be helpful to the jury and could help explain why Defendant may have signed a statement that he now disavows. *See United*

States v. Miller, 874 F.2d 1255, 1261 (9th Cir. 1989) (holding that polygraph evidence might be admissible if it is introduced for a limited purpose that is unrelated to the substantive correctness of the results of the polygraph examination). It is understandable that Defendant may have been less concerned about the actual contents of the statement when he signed the document once he had been told that he passed the polygraph examination. At that point, he may have been under the impression that he was helping the FBI trace possible classified documents that he had inadvertently taken to his storage locker. He had denied that he had knowingly taken such documents and had passed an FBI lie detector test on that issue. The FBI told him that it was investigating allegations that his exwife had sent classified documents from the locker to subversives. His willingness to agree to a suggestion from the FBI that he may have taken a document described by his exwife would be influenced by his knowledge that he had been exonerated by the lie detector test and he was now helping the government in its investigation of his exwife's activities. Under this scenario, then, it does not matter whether Defendant passed the polygraph, or even whether the polygraph is reliable science, since the relevant information is that he was told that he passed. The probative value of this information, that he was told that he passed, substantially outweighs any prejudicial value. The Court can instruct the jury on the limited purpose for the admission of this information.

The second purpose is more problematic and must be reviewed under three separate Federal Rules of Evidence: 702; 704; and 403. See *Ramirez-Robles*, 386 F.3d at 1245.

A. Federal Rule of Evidence 702

Fed. R. Evid. 702 governs the admissibility of expert testimony and provides that: If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case. Fed. R. Evid. 702.

The basic prerequisites the Court must find in order to admit an expert's testimony are: (1) the particular testimony offered must be helpful to the trier of fact; (2) the expert must be qualified to provide opinions on that topic; and (3) the proposed evidence must be reliable from an evidentiary standpoint and must fit the facts of the case. *United States v. Morales*, 108 F.3d 1031, 1039 (9th Cir. 1997). The Supreme Court has instructed district courts to serve as gatekeepers, to determine the reliability and relevancy of expert testimony, within the meaning of Rule 702, before admitting the testimony. *Daubert*, 509 U.S. at 589; *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 141 (1999). Although expert testimony is liberally admissible under the Federal Rules of Evidence, district courts must be vigilant in demanding that the testimony meet the prerequisites under Fed. R. Evid. 702. *Daubert*, 509 U.S. at 588-89. The district court's gatekeeping role is significant for two reasons: (1) it allows the expert to testify based on hearsay information and to express his observations as generalized "opinions," rather than as first-hand knowledge; and (2) statements of the experts are likely to carry special weight with the jury. *Jinro America, Inc. V. Secure Invs., Inc.*, 266 F.3d 993, 1004 (9th Cir. 2001).

Dr. Gordon Barland testified for the defense. His testimony was very informative

and helpful to the Court. The Court finds Dr. Barland's testimony highly credible. He currently is a consultant in forensic psychophysiology and an adjunct professor at the Department of Defense Polygraph Institute and the University of Virginia. From 1986 to 2000, he was employed at the Department of Defense Polygraph Institute as Chief of the Research Division and, ultimately, as Chief of the Special Services at the Institute, where he conducted research in polygraph countermeasures, and taught counter-countermeasures to Federal polygraph examiners. In this position, Dr. Barland had the highest level of responsibility for the administration of polygraph examinations for the Government. He has two bachelors degrees, one in Zoology, and one in Psychology, a Masters degree in Psychology, and a Ph.D in Experimental Psychology. He has testified numerous times as an expert with regard to polygraph examinations.

Dr. Barland explained to the Court that the polygraph device monitors the physiological reactions that take place in a person's body in response to certain questions. The questions can be characterized as relevant questions, irrelevant questions, and the comparison, or control, questions. The relevant questions relate to the crime under investigation. The irrelevant questions are those questions where the answer is very obvious. The control or comparison questions are questions that are designed to elicit a response in an innocent person that would measure a greater degree of physical reaction than the response to the relevant questions. The questions are designed in such a way that an innocent person would be more likely to lie in answering the question or doubt whether his or her answer to the question was completely truthful. While an innocent person may react more strongly to the comparison or control questions, the theory is that the guilty person will act more strongly to the relevant questions. The examiner assigns a numeric number that corresponds to the differences in the reaction of the two types of questions. The examiner then concludes whether the test indicates no deception (NDI) or deception (DI). If there is no difference in the reactions between the control questions and the relevant questions, the test is scored as inconclusive.

Dr. Barland emphasized that the polygraph examination cannot detect lies. Instead, it detects physiological responses that are associated with individuals who are being deceptive. More importantly, there is no known physiological response that is unique to deception. The score obtained is a result of a comparison of the pattern of responses in the individual.

Dr. Barland explained that a crucial factor in the polygraph examination is the pre-test interview. During this interview, the polygraph examiner gathers as much information about the case as he or she can by reviewing the investigative file, the case facts, and visiting the crime scene. It is important for the examiner to have a good understanding of the factual basis surrounding the crime. Additionally, the examiner will explore the examinee's background, assess his or her intelligence and understanding of the facts of the case, and review any medical or psychological problems that might invalidate the test.

Examinees are always given their *Miranda* rights prior to the examination. In addition, the examinee is aware of the questions that will be asked. Under the federal system, the polygraph test is voluntary. If Defendant does not approve of the question, then he or she will be not asked the question.¹ Dr. Barland explained that the purpose of the polygraph examinations is not to trick or surprise the examinee. If that were to happen, the results would be skewed so that the examiner would not know if the physiological reaction would be from the surprise or from the deception. In fact, according to Dr. Barland, the examiner's goal is to eliminate or control all things that could cause a distraction. As such, Dr. Barland states that the examination should take place in a small room, with no windows, that is sound-proof, and no other persons should be present in the room.

Dr. Barland also explained the evolution of polygraph examinations with respect to the federal government. In 1986, the Department of Defense Polygraph Institute was created. Prior to the creation of the Institute, federal polygraph examiners were trained using a vocational school curriculum. Dr. Barland described this method as a "cookbook formula." With the creation of the Institute, the quality of the instruction was upgraded. A curriculum was developed in which all the students learn specific principles regarding polygraph examinations. Along with the improved curriculum and instruction, the Institute was instrumental in setting up a strict quality assurance program. Under this program, every polygraph examination conducted by government polygraph examiners is reviewed by an independent examiner. The review consists of examining the questions that were asked, the nature of the examination, and includes a review of any video and audio tapes. The quality assurance program also evaluates the agency's polygraph programs by reviewing its policies and procedures, structure, continuing education, and implementation of technology, and gives its stamp of approval on those agencies that meet the Institute's standards. These standards were initially published in 1998 as the Federal PDD Examiner Handbook. See Quality Assurance Program, at http://www.dodpi.army.mil/div_QAP.asp (last visited April 13, 2005). It appears that this Handbook has been adopted as the standard for the federal polygraph community. *Id.*

A review of the Department of Defense Polygraph Institute web page is instructive in understanding the scope of the training and control of government polygraph examiners. The Institute is a federally-funded institution providing graduate and continuing education courses in forensic psychophysiology. DoDPI Mission, at <http://www.dodpi.army.mil/mission.asp> (last

¹ In actual practice, this refusal to answer a proposed question does not end the process or stop the interrogation of the suspect. Because the test is used to exonerate the suspect, the refusal to answer results in more aggressive questioning about the area of refusal. Mr. Kirk, the FBI examiner, testified that he was the expert interrogator called in after the assigned agent had exhausted all other processes. The polygrapher is, in fact, an expert interrogator who uses the polygraph process to further interrogate the weak spots exposed in the process.

visited April 13, 2005). Its mission is four-fold: to (1) qualify Department of Defense and other federal personnel for careers as psychophysiological detection of deception (PDD) examiners; (2) provide continuous research in forensic psychophysiology and credibility assessment methods; (3) manage the PDD continuing education certification program for federal agencies; and (4) manage the Quality Assurance Program that develops, implements, and provides oversight of PDD standards for the federal polygraph programs. *Id.*

In 1987, the Institute began to develop a concerted research effort. Dr. Barland was hired to implement the program. The research program focused on establishing the validity and accuracy of polygraph examinations, improving the technology used when conducting the examinations, identifying countermeasures, and developing counter-countermeasures. Today, its mission is to "advance and communicate the body of knowledge in the field of behavioral and psychophysiological detection of deception in support of federal polygraph testing and instructional programs." Research Division, at http://www.dodpi.army.mil/div_RES.asp (last visited April 13, 2005). The research division has supported and is supporting a wide variety of research projects in an effort to achieve its mission. *Id.*

Dr. Barland reported that there are at least 600 polygraph examiners employed by the federal government. At least 25 different federal agencies routinely conduct polygraph examinations. Recent reports to Congress state that at least 11,000 polygraph examinations are conducted by these federal agencies each year. This statistic does not include polygraph examinations conducted by the National Security Agency (NSA) involving classified information.

Dr. Barland stated that the admission of polygraph examinations at trial has not been shown to overwhelm the jury. Dr. Barland reported a case in which the jury was polled after issuing a verdict in a case in which polygraph evidence was admitted. The jury agreed to set aside the polygraph results until it was able to review the other evidence, then it considered the polygraph evidence in

relationship to the other evidence. Dr. Barland also reported a case in which the defendant was cleared by the polygraph evidence, but he or she was convicted by the jury. Mock jurors have also been used to assess the influence of the polygraph evidence, and Dr. Barland concluded that there is no evidence to support a conclusion that jurors are unduly influenced by polygraph evidence.

Dr. Barland reviewed the results of the polygraph examination administered on Defendant, by looking at the polygraph report, the worksheet, the questions, the consent form, the advisement of rights form, the score sheet, and the polygraph charts. He concurred in the results of the polygraph examination, in that Defendant showed no signs of deception when answering the relevant questions. He was confident of the manner in which the examination was conducted, he saw no indicators of countermeasures being taken, and he arrived at the same numeric scoring. According to Dr. Barland, there was no reason to doubt the validity of this particular polygraph examination.

In hearing Dr. Barland's testimony, it became clear to the Court that the accuracy and reliability depended a great deal on the experience and expertise of the polygraph examiner. In this case, Trace Kirk administered the examination. He also testified at the hearing. Mr. Kirk had no independent memory or recollection of conducting the examination, but he was able to testify to his training and the manner in which he usually conducts polygraph examinations.

Mr. Kirk testified that he is called in to conduct a polygraph examination when the case agent wants the suspect to answer something the agent wants to know. The Government questioned Mr. Kirk extensively regarding the actual question that was used in question 5R. Specifically, the Government focused on the words "intentional" and "highly classified." Mr. Kirk testified that he developed these questions after discussing the case with the case agent and after the pre-test interview with Defendant. While it is true that the questions are approved by the examinee prior to the testing, according to Mr. Kirk, the process is not one where the examinee writes

the question that he wants asked. The examiner knows what information the case agent is looking for and will formulate the question in order to get an answer to the case agent's need. If the examinee does not approve the question, the question is not modified or changed to the examinee's liking. If the examinee does not want to answer the question presented by the examiner, the examination will not be conducted. Mr. Kirk also explained that federal polygraph examiners are viewed as the "pinch hitters" of the investigation. They are the most experienced interrogators in the FBI. Usually, if deception is indicated, the polygraph examiner is the one who will continue to interrogate the suspect. Mr. Kirk testified that in many instances, he is successful in obtaining confessions during the post-test interview.

In reviewing the testimony and documents submitted with regard to the Government's motion, it became apparent to the Court that the polygraph examination conducted in this case is unique in many ways. The most important one is that this examination was conducted for investigative purposes by the federal government, using a federally-trained polygraph examiner. The results of the polygraph examination were reviewed by higher federal polygraph officials and the results were found to be reliable. Another aspect is the wide-spread use of the polygraph examinations in the federal government. Not only are they routinely conducted, but many employment and hiring decisions are based on the results of the polygraph examination. Dr. Barland testified that in many cases, the results of the polygraph will dictate whether the investigation will continue or if it will be re-focused elsewhere. In reviewing the case law, the Court notes that for most, if not all, of the prior cases excluding polygraph evidence, these factors were not present.

The Government submitted the Declaration of Phillip Gadd in support of its notion in limine. Mr. Gadd is the Unit Chief for the FBI's Polygraph Unit, FBI Security Division, in Washington, D.C. In his affidavit, Mr. Gadd criticized the reliability of polygraph evidence because there are no standards in place for private or commercial polygraphers.

Mr. Gadd stated that many commercial polygraphers operate with little or no accountability, quality control, or peer review. He also stated that it is not uncommon for polygraphers to reach different conclusions after reviewing the same test results. Additionally, Mr. Gadd stated that there is potential for abuse by polygraphers who are biased either for or against the suspect.

None of these concerns are present in this case. Mr. Kirk is an experienced polygraph examiner. He was trained at the Polygraph Institute and is bound by the standards adopted by the Institute. His conclusions were independently reviewed by federal staff and by Dr. Barland and they were found to be accurate.

Thus, in reviewing whether to admit the polygraph evidence, the Court is not attempting to determine whether polygraph evidence, in general, should be admitted. Instead, the Court is making a determination whether this particular polygraph examination, which was conducted by a federally-trained polygraph examiner, is admissible in this case.

In *Daubert*, the Supreme Court articulated several factors that the district court should consider in determining whether expert testimony should be admitted under Fed. R. Evid. 702. These factors include: (1) whether the scientific method is capable of being tested; (2) whether the scientific theory has been the subject of peer review and publication; (3) whether the method has a known rate or potential rate of error; (4) the general acceptance of the method within the scientific community; and (5) whether the method is controlled by established standards. *Daubert*, 509 U.S. at 593-94.

(1) Whether the scientific method is capable of being tested

It is widely acknowledged that it is difficult to test whether a polygraph examination accurately detects deception. Both Dr. Barland and Mr. Gadd acknowledge this. How does one measure "truth?" Nevertheless, countless studies have been undertaken in which the methods of polygraph have been tested. Generally, the research has

been three-fold: real-life testing, laboratory studies, and extensive literature reviews. In laboratory studies, subjects may participate in a mock theft and then be instructed to be deceptive about their participation in that crime, or they are told that a crime had been committed, but they did not participate in the crime in any way. In real-life testing, some studies have individuals review case files to make an independent decision regarding the guilt or innocence of the defendant and then, once that determination has been made, compare it to the outcome of the polygraph test.

It is easy for the Court to conclude that the subject of polygraph examinations is capable of being tested. This conclusion is bolstered by the fact that the Polygraph Institute has a research division, which has conducted or funded numerous studies on polygraph examinations. It is doubtful that the Government would spend its time and money on research if it believed that the subject was not capable of being scientifically tested. While experts may disagree with the methods or results of the study, it is clear that the results are not being "made up." Nor is there any evidence that the research is being conducted in a haphazard way.

(2) Whether the scientific theory has been the subject of peer review and publication

Studies and opinions on polygraph evidence have been subject to extensive peer review. Mr. Gadd concludes that this does not necessarily imply scientific method. Nevertheless, for purposes of the *Daubert* analysis, this factor weighs in favor of admitting evidence of polygraph examinations.

(3) Whether the method has a known rate or potential rate of error

Mr. Gadd reported on the results of eleven studies addressing polygraph validity. According to Mr. Gadd, these studies showed a wide range of validity or accuracy rates, ranging from 48% to 90%. Dr. Barland reports that current results of lab and field studies suggest the accuracy rate for those who are guilty to be 85-90% and for those who are innocent to be 80-90%. Notably, Dr. Barland's

numbers apply in situations where, as here, the control question technique is administered by trained experienced examiners using approved techniques. The studies criticized by Mr. Gadd are not informative, where the studies were conducted using a wide range of examiners who were not trained and monitored by the Government.

(4) The general acceptance of the method within the scientific community

Under *Daubert*, widespread acceptance is no longer required. Both Dr. Barland and Mr. Gadd referred to studies that measured the rate of acceptance of polygraph examinations within the scientific community. Both referred to a 1984 Gallup survey of the Society for Psychophysiological Research (SPR) in which nearly two-thirds of the members of SPR stated an opinion that polygraph tests were a useful tool in legal proceedings, when considered with other evidence. The Court questions the relevance of this study. Many of the members had no understanding or knowledge of the theory or practice of polygraph examinations. Relying on such a study to determine the general acceptance within the scientific community would be like polling the American Bar Association concerning the United States Sentencing Guidelines. Many members of the American Bar Association have never even opened the Guidelines. Any opinions expressed in such a survey would be drastically different than those expressed in a survey of federal criminal defense lawyers.

Mr. Gadd referred to a follow-up survey conducted in 1994, and referenced Exhibit C-1. Mr. Gadd stated that this survey, which had a 91 % response rate, reported that more than 70% of the SPR members opposed the use of Controlled Question polygraph examinations as evidence in Court, and 64% of the SPR members denied that this type of polygraph examination was based on sound principles. In reviewing Exhibit C-1, it appears that Mr. Gadd may have been referring to a different study than the one provided to the Court. Exhibit C-1 is an abstract of a survey that appears to have been published in 1994. According to the abstract, there was a 30% response rate, and the results indicated that 61% felt that polygraph tests were useful for

legal proceedings, when considered with other evidence. When only those individuals who considered themselves to be well-informed about polygraph tests were considered, the percentage who considered polygraphs examinations to be useful rose to 82.9%. The abstract reported that less than 2% of the respondents of the survey felt that polygraph examinations were of no usefulness. The study concluded that the membership of SPR generally has a favorable attitude toward polygraph testing, and this favorable attitude has been stable for more than 10 years.

These studies, however, are of little value in this situation, where many of the criticisms and concerns against polygraph examinations have been either eliminated or minimized. In this case, the federal polygraph examiner who administered the exam was trained in a specific protocol, and the results of the test were independently reviewed. There is no indication that the examiner was biased either for or against the Defendant, and clearly this was not a case where the Defendant shopped around until he received a favorable result.

Moreover, the results of these studies must be contrasted with the wide-spread acceptance of the routine use of polygraph examinations among the federal agencies. Based on Dr. Barland's testimony, it is easy for the Court to conclude that with regard to federally administered polygraph examinations, there is acceptance within the federal agency community.

(5) Whether the method is controlled by established standards.

While Mr. Gadd's opinion expressed concern about the lack of standards within the polygraph community, that concern is minimized in this case. In this case, the federal government controlled the training, the certification, and the continuing education of the federal polygraph examiner who administered the exam to Defendant. In addition, the Quality Assurance Program provided a second layer of standard that this particular polygraph examination had to meet.

In *Cordoba*, the district court held an evidentiary hearing and made the following

determinations: (1) the reliability of polygraph testing fundamentally depends on the reliability of the protocol followed during the examination; (2) there were no reliable error rate conclusions for real-life polygraph testing; (3) there is no general acceptance in the scientific community for the courtroom fact-determinative use that was in question in that case; and (4) there were no reliable and accepted standards controlling polygraphy. *Cordoba*, 194 F.3d at 1058. The circuit held that the district court did not abuse its discretion in finding that the polygraph evidence was inadmissible under Fed. R. Evid. 702 and *Daubert*. *Id.*

After hearing the testimony of Dr. Barland and reviewing the affidavit of Mr. Gadd, it is apparent that many of the *Cordoba* determinations do not apply to this case. While the Court agrees that the reliability of polygraph testing depends on the reliability of the protocol followed during the examination, in this case, the protocol used includes quality control measures, and there is a high level of certainty with regard to the skill level of the polygraph examiner. Moreover, there is a high level of acceptance within the government agencies, regarding the reliability and usefulness of polygraph examinations. Finally, within the realm under which the polygraph examination was conducted in this case, reliable and accepted standards were in place.

When reviewing the *Daubert* factors to determine whether evidence regarding the polygraph examination administered in this instance should be admitted, the factors weigh in favor of admitting the evidence for substantive purposes, in addition to being relevant to Defendant's state of mind at the time the statement was signed.

B. Fed. R. Evid. 704(b)

Fed. R. Evid. 704(b) provides that:

No expert witness testifying with respect to the mental state or condition of the defendant in a criminal case may state an opinion or inference as to whether the defendant did or did not have the mental state or condition constituting an element of the crime charged or of a defense thereto. Such ultimate issues are matters for the trier of fact

alone.

This rule prohibits testimony “from which it necessarily follows, if the testimony is credited, that the defendant did nor did not possess the requisite *mens rea*.” *United States v. Campos*, 217 F.3d 707, 711 (9th Cir. 2000).

It appears that the only question that is implicated by Fed. R. Evid. 704(b) would be Question 5R, which asks: Did you ever intentionally store at home highly classified documents? In *Campos*, the questions posed by the polygraph examiner were as follows:

Q.33: When you were driving the van on the twenty-fifth of January, did you know there were drugs in the van?

Answer: No.

Q.35: Before crossing the border on the twenty-fifth of January, did you know that there were drugs in the van?

Answer: No.

The polygraph examiner concluded that “[c]oncerning the relevant questions # 33 and # 35 examinee’s responses were not typical of those associated with deception.” *Id.*, at 710.

The circuit held that the polygraph examiner’s testimony that the defendant was truthful in stating that she did not know that she was transporting marijuana left no room for inference but, rather, compelled the conclusion that she did not possess the requisite knowledge, which would be in direct violation of Fed. R. Evid. 704(b). *Id.* at 711; see also *Ramirez-Robles*, 386 F.3d at 1245 (holding that Fed. R. Evid. 704(b) applies to questions that go to the defendant’s mental state, but recognizing that 704(b) does not apply to factual questions).

In this case, according to Ninth Circuit precedent, question 5R and the corresponding interpretation of the response, which implicates Fed. R. Evid. 704(b), should not be admitted for substantive purposes. If evidence of question 5R were to be admitted, the testimony of the polygraph examiner would be that when Defendant answered this question,

there was no physical evidence of deception. The polygraph examiner would be stating an opinion as to the mental state or condition, *i.e.* that he was not being deceptive when he denied knowingly taking highly classified documents. From this conclusion by the polygraph expert, the jury could infer that the Defendant did not have the mental intent necessary to be convicted, which constitutes an element of the crime charged. As such, it is prohibited testimony under Ninth Circuit precedent. Thus, while the polygraph question asked may be admitted to show the Defendant’s state of mind at the time he made subsequent statements to the FBI, the opinion that he was not deceptive cannot be admitted.

C. Fed. R. Evid. 403

Fed. R. Evid. 403 states:

Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by consideration of undue delay, waste of time, or needless presentation of cumulative evidence.

As the Court has stated before, from its perspective, the crux of the Government’s case rests on Defendant Davila’s statements. The circumstances surrounding the makings of that statement, as well as indications of the truthfulness of the statements, are critical to this case. Based on the testimony of Dr. Barland, concern for the prejudicial effect of the polygraph results appears to have been over-emphasized. The jury will be able to decide what weight to give the results of the polygraph evidence. The testimony of Dr. Barland and Mr. Kirk was enlightening for the Court. The Court is confident the jury will be able to hear the evidence regarding the administration of the polygraph examination in this case and weigh the evidence accordingly.

In this case, Defendant made statements under three different settings. These statements were the result of a concerted effort on the part of the FBI to determine Defendant’s involvement and, more specifically, to identify what classified documents had been sent and where they had been sent. The agents involved were

interviewing Defendant and looking for areas of weakness to exploit. Part of the interrogation process was the polygraph examination. The circumstances under which he gave his statements, most importantly the two after he was told that he had passed the polygraph test, which included the "show-and-tell" session, are crucial for the jury to determine the credibility of the statements. The significance of Defendant's understanding that he had passed the polygraph test cannot be overstated. Once he knew he had passed, it is highly likely that he was in a helpful mood, and would have been more willing to admit to something, even if he was not sure that it was true. Thus, during the show and tell session, Defendant's frame of mind is highly relevant, where the agents were doing the showing, and Defendant was doing the telling. The significance of Defendant's statement is different if it is a statement that was made against his interest, or if it is a statement where he believes that he is being helpful in a criminal investigation of someone else. In determining the weight to give Defendant's statements, it is critical that the jury hear evidence regarding the circumstances of giving the statements.

D. Other Considerations

At the hearing and in its briefing, the Government criticized the questions that were asked of Defendant. Mr. Kirk testified regarding the formulation of the questions. The Court finds Mr. Kirk to be highly credible. Although Mr. Kirk has no independent recollection of the pre-polygraph interview, he did testify that he follows the standard protocol under which he was trained. Therefore, the Court infers that the questions that were asked were developed according to the standard protocol, which, Mr. Kirk testified, would be the result of a collaborative process, involving the case agent, and these particular questions were asked in order to have the particular question answered. The Court recognizes that it is not an expert with regard to the appropriate formation of polygraph questions. After hearing testimony for two days on the subject, however, the Court is confident that federal polygraph examiners are highly trained professionals who would ask appropriate questions.

Therefore, the Court has no reason to doubt the reliability of the polygraph examination administered in this case based on the wording of the questions.

E. Conclusion

After reviewing the evidence and hearing the testimony of the experts, the Court makes the following rulings:

1. For purposes of Defendant Davila's state of mind, the Court will admit all of the polygraph questions and the statement that Defendant was told by the FBI agents that he had passed the examination.

2. For substantive purposes, the polygraph examination administered to Defendant meets the *Daubert* requirements and is highly relevant to Defendant's case. The Court will exclude the specific evidence that Defendant was not deceptive in answering question 5R. The remaining responses and interpretations of the responses can be admitted.

Many of the concerns raised by the Government's briefing can be addressed through cross-examination and limiting instructions, if necessary. The jury will make the ultimate determination as to what weight to give the results of the polygraph examination.

Accordingly, **IT IS HEREBY ORDERED:**

1. The Government's Motion in Limine in Opposition to the Admission of Polygraph Evidence (CR-03-021-RHW [Ct. Rec. 2271]) is **GRANTED in part and DENIED in part.**

IT IS SO ORDERED. The District Court Executive is hereby directed to enter this order and to furnish copies to counsel.

DATED this 22nd day of April, 2005.
s/ ROBERT H. WHALEY
United States District Judge

Specific and Reactive Sensitivities of Skin Resistance Response and Respiratory Apnea in a Japanese Concealed Information Test (CIT) of Criminal Guilt¹

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Abstract

Reactive sensitivity in the psychophysiological Concealed Information Test (CIT) employed to infer criminal guilt refers to the degree to which autonomic responses of the examinee to propositions concerning details of the crime that are known to be true only by the guilty are greater than the responses to propositions that are not known to be true. The hypothetical psychological mechanisms through which reactive sensitivity in the CIT occurs are generally considered to be attentional, orienting, or cognitive, rather than emotional. However, there is a potentially measurable emotional component to the CIT, especially in the field rather than lab version. This depends on comparing questions that are more closely connected with the (serious) crime (and hence perhaps involve more emotional) with those that are less connected. In the present study (which is not an experiment in which independent variables are manipulated), the CIT results of 30 Japanese suspects later found guilty of serious crimes were examined both in terms of the conventionally used skin resistance response measure, and of a newly introduced respiratory-apnea response (which occurs rarely in the lab, but frequently in the field). Only the respiratory measure showed evidence for significant specific sensitivity; both measures showed nondifferential, and highly-significant reactive sensitivity.

The use of the polygraph or "lie detector" is, purportedly, a scientifically based application of psychophysiology. Psychophysiology is an area of psychology that employs subtle changes in physiological functions controlled by the autonomic nervous system (such as skin resistance, heart rate, and blood pressure) to differentiate among psychological states. These functions are neither under precise voluntary control nor normally detectable by the person in whom they occur. The commonly stated rationale of the polygraph, then, is that while our lips may protect us, our autonomic nervous system will reveal whether we are lying.

One polygraphic application, as it is widely used in North America, is also known as the "lie detector." The procedure includes measurement of physiological functions and a "post-test interview" phase, which is really an interrogation. Its proponents claim that this sort of polygraphic examination can discriminate, from the measurement results alone, whether an individual is telling the truth or being deceptive, and hence whether the examinee is guilty or innocent. Reduced to its essentials, the measurement aspect of the polygraph -- the period during which

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physiological changes are recorded from the examinee -- consists of determining whether the autonomically controlled responses (e.g., skin resistance response commonly referred to as the GSR) to questions related to the issue being investigated (e.g., Did you steal the money?) are larger than those to so-called "control" questions (e.g., Did you ever do anything you were ashamed of?). So this approach is also commonly called the "Control Question Test" or CQT, because responses to the "control" questions are compared to those of the relevant (issue-related) questions.

However, as has been detailed elsewhere (e.g., Furedy, 1996a, 1996b), the CQT is, in fact, not a test at all in the sense that, for example, an IQ test is a test. IQ tests are controversial in terms of their validity (i.e., how accurately they measure intelligence), but they are scientifically based and are standardized procedures with a predetermined length and set of questions. This ensures that the test given by one competent operator is essentially the same as that given by another. In contrast, the so-called "control" questions of the CQT are constructed by the examiner as a result of a discussion with the examinee, the procedure's entire duration can vary from 1 to more than 12 hours, and, at the examiner's discretion, a significant and variable amount of time can be spent, not on its detection function (i.e., determining whether deception has occurred), but on its other interrogatory function (i.e., eliciting a confession).

In addition, strong proponents of the CQT such as Barland and Raskin (1973) have admitted some time ago, the term "control" is not used in its normal experimental/control scientific meaning. In standard scientific terms, the only difference between relevant and "control" questions should be what is purported to be detected (i.e., deception or guilt). Rather, the "control" questions in the CQT are said by CQT polygraphers to function as an "emotional standard." These "emotional-standard," so-called "control" questions are made up by the polygrapher in consultation with the examinee, with the latter essentially lying to questions that are unrelated to the "specific issue," (i.e., the crime under investigation). The fate of the examinee depends on whether autonomic responding to relevant questions exceeds that of "control"

questions (in which case s/he is judged to be "deceptive" or guilty), or the reverse (in which case s/he is judged to be "truthful" or innocent). As has been argued in detail elsewhere (e.g., Ben-Shakhar, 1991; Ben-Shakhar & Furedy, 1990; Furedy, 1996a, 1996b), the rationale for this "emotional standard" comparison makes no scientific sense.

In contrast to the CQT, there is a psychophysiological test that, under certain specifiable conditions, can provide a standardizable, scientifically based estimate of guilt, and where the term "control" is used in its normal scientific sense. This is the Guilty Knowledge Test (GKT). It was originally suggested by Lykken (1959) as a psychophysiological method for detecting guilt. We agree with writers like Saxe (1991) that the term Concealed Information Test (CIT) is a more accurate description of this procedure, because it detects only concealed information; guilt may be inferred both from the act of concealment and from the content of what is concealed. Whatever the label, it is only in Japan that the GKT or CIT has been used consistently in the field to detect criminal guilt. In other countries (like the U.S.A., Canada, and Israel), the psychophysiological detection of criminal guilt is founded on CQT methods, with the American Polygraph Association being the main certifying organization.

The rationale of the CIT is that if details of the crime are withheld so that only the guilty individual has such information, then the presence of this information will be revealed by greater autonomic responding on the part of concealing individuals to "critical" questions (CRQs) than to "control" questions (COQs). To take a hypothetical, illustrative example, if there has been a murder, but information about the mode of killing (e.g., knife) has been hidden from the public, then a question like "Did you kill X with a knife?" will be a CRQ only for the guilty suspect attempting to conceal the mode-of-killing information. Other questions like "Did you kill X with a gun, club, strangulation, or defenestration?" will be COQs; for nonconcealing, innocent suspects, all those five questions will be COQs; one would expect no greater responding to the "knife" question

than to the other questions. It will be noted that in this experimental or "critical" versus "control" comparison, the term "control" is used in its normal, scientific sense. That is, if the conditions required by the CIT are met, then the only difference between critical and control questions is the presence of concealed information (or "guilty knowledge") in the guilty suspect.⁵

In the discipline of psychophysiology, the distinction between "reactive" and "specific" sensitivities of autonomic responses was proposed in connection with heart-rate (HR) acceleration and the attenuation of the T-wave amplitude (TWA) of the electrocardiogram (see, e.g., Furedy, Heslegrave, & Scher, 1992). The HR-acceleration measure is more reactively sensitive than TWA attenuation in the sense that HR acceleration to different levels of difficulty of a cognitive iterative-subtraction task yields more significant differences (i.e., a larger difference between difficult and easy versions of the task) than does TWA attenuation. On the other hand, the TWA-attenuation measure shows greater specific sensitivity in the sense that it differentiates between the actual performance of the iterative-subtraction task and a prior listening period when subjects listen only to the two numbers on which they later have to perform the iterative subtraction. Thus, whereas HR accelerates both during the listening and the task periods, TWA attenuates only during the task period. The greater specific sensitivity of TWA compared to HR has been interpreted as indicating TWA's superiority in psychophysiological differentiating mental effort from other cognitive functions, even though HR is more reactive than TWA to such differences as task difficulty (Furedy, 1987). The physiological reason for TWA attenuation's greater specific

sensitivity in the iterative subtraction task may be that whereas (atrial) HR acceleration is influenced significantly both by sympathetic excitation and parasympathetic withdrawal, (ventricular) TWA is predominantly influenced only by the sympathetic nervous system (see, e.g., Furedy et al., 1992).

For the CIT, viewed as an application of psychophysiology to detect guilt, reactive sensitivity can be considered as the extent to which, in guilty suspects, responding to the CRQs exceeds responding to comparison COQs. This difference may reflect only a cognitive, informational, or attentional difference. In line with this attentional idea, the main hypothesized psychological mechanism through which the CIT functions, has been considered to be an orienting rather than an emotional one (see, e.g., Ben-Shakhar & Furedy, 1990; Lykken, 1974, 1981). Nevertheless, the CIT, especially in the field rather than the laboratory, may also operate through more emotional psychological mechanisms. The "real-life" versus laboratory distinction has been long recognized in the investigation of psychological functions, and is commonly referred to as the issue of "ecological validity." The danger of generalizing from laboratory to the field is especially great in the case of the psychophysiological detection of guilt. More than two decades ago, Lykken (1981) characterized laboratory studies (even those that involved "mock crimes" such as stealing \$20 from an office) as the mere playing of a game, in contrast to committing and/or being suspected of committing a real crime. It is highly likely that the difference between the two situations is not just a matter of degree of attention paid to the questions, but rather a difference in the quality of the emotions involved.

⁵The fact that a procedure is a scientifically based test is no guarantee of its accuracy or validity. The accuracy of the CIT in laboratory experiments has been systematically assessed (see, e.g., Ben-Shakhar & Furedy, 1990), and while well above chance levels, it is not sufficiently high to encourage application to individuals, especially when it is employed as a determinative source of evidence for guilt versus innocence. In the field, where its wide use is confined to Japan, there have been no systematic studies of its accuracy, at least partly because "ground truth" is quite hard to establish. Some of these sources of inaccuracy may stem from the fact that, like any scientifically based procedure, the CIT can fail if the conditions specified for its use are not met. For example, if an innocent suspect does obtain some specific knowledge of the crime, then s/he will be wrongly classified as guilty, thus raising the CIT's false positive rate. Conversely, if a guilty suspect does not remember certain details of the crime that form a CRO, that suspect may be wrongly classified as innocent, thus raising the CIT's false-negative error rate.

In the field, one way of indirectly assessing the difference in emotional components associated with various questions, is to distinguish between questions that are closely related to the crime (when it is serious like murder and rape), and those which are less closely related. For example, questions about the particular mode of operation employed to commit sexual assault on a minor are more closely related to the crime than questions about the colour of the coverlet on which the crime was committed. An autonomic measure in the CIT shows specific sensitivity to the extent that it differentiates the closeness-to-crime factor. This differentiation in turn can be hypothesized to involve an emotional aspect rather than the more general attentional aspect of the mere salience of the questions.

The phasic electrodermal response (commonly referred to as the "GSR" by polygraphers and most psychologists though not by current experimental psychophysicologists) occurs approximately one to five seconds following stimulus onset. This response has been the maximally reactively sensitive index in CIT studies both in the laboratory and the field (see, e.g., Ben-Shakhar & Furedy, 1990). In the field, the common measure is the skin resistance response (SRR). The SRR is unpopular in modern experimental psychophysiology, mainly because of the high correlation between SRRs and skin resistance levels. However, these correlations are significant only in between-subject comparisons. [and] It has been clear for some time (e.g., Bitterman, Reed, & Krauskopf, 1952; see also Barry & Furedy, 1993) that within-subject comparisons of the sort involved between CRQs and COQs are not significantly confounded or affected, especially when the two sorts of questions are close together in time.⁶

Respiration changes in such aspects as frequency, amplitude, and respiratory line

length have also been frequently measured in CIT studies. These measures, like most of those used in conventional experimental psychophysiology, are quantifiable on an interval scale. A relatively new respiratory phenomenon is that of breath holding or respiratory apnea (RA). This measure, like alpha frequency in EEG studies, is not quantifiable on an interval scale, but is most readily assessed in terms of frequency of occurrence. The RA phenomenon has been a recent focus of interest of Japanese field polygraphers in Japan (Nakayama, 2001; Nakayama & Yamamura, 1990). This interest has been generated at least partly because, while the RA phenomenon is quite rare in laboratory experiments, it occurs quite frequently in field CITs.

We hypothesized that the RA response may have greater specific sensitivity to emotional aspects of the situation than the more ubiquitous and less differentiated SRR, which is reactive to a very wide range of stimuli that involve both cognitive and noncognitive variables. In advancing this hypothesis concerning the relative specific sensitivities of RA and SRR, we were influenced by the previously mentioned contrast between the less reactive but more specifically sensitive (to mental effort involved in the actual doing of a cognitive task) TWA attenuation, and the more reactive but less specifically sensitive HR attenuation (Furedy, 1987).

It bears emphasis that the study we report here is not an experiment in which independent variables are manipulated and subjects undergo the identical conditions except for those that involve the manipulated experimental variables. Experimentation is feasible in the laboratory version of the CIT, where guilt is known (in fact, manipulated, either through instructions to imagine a crime or to actually commit a "mock" crime). In the field, there is no analogous certainty about guilt of "ground truth," unless one grants the

⁶The within-subject, closeness-in-time features control for both between- and within-subject variations in levels of nervousness or arousal, as well as such individual differences as those in personality or intelligence. This sort of within-subject control is also present with the CQT, which, however, has other major methodological confounds (see, e.g., Ben-Shakhar & Furedy, 1990).

assumption advanced by proponents of the CQT polygraph like Raskin that confessions constitute a certain criterion (or "gold standard") of guilt or "deceptiveness" (for the contrary view, see, e.g., Furedy & Heslegrave, 1991a, 1991b; Lykken, 1981). Another lab versus field difference, which is important if one wishes to make statistical significance inferences, and hence examine an adequately large sample of subjects, is that whereas in the laboratory, a large set of subjects can be run who are "guilty" of the same crime and are asked exactly the same set of CIT-related questions, in the field there is variation both in the nature of the crime and the exact number of questions asked by various CIT polygraphers.

Accordingly, we report not an experiment, but a study that has a sufficiently large set of statistically controlled observations that allow conclusions to be inferred with a specified error rate, given certain restricted patterns of outcomes. The study's central concern was to compare the relative reactive and specific sensitivities of SRR and RA by reanalyzing data obtained from 30 field cases of guilty suspects (all confirmed, although not proved, by a later confession), each of whose physiological records showed at last one case of question-elicited RA.

The confounding caused by selecting for RA favours RA in terms of reactive sensitivity, so that only an $SRR > RA$ reactive-sensitivity outcome is unambiguously interpretable as showing that SRR is more reactively sensitive (i.e., a better CIT indicator) than RA.

The evaluation of relative specific sensitivity (here defined as the comparison between responses elicited by questions more, versus less, closely related to the crime) may also be confounded by selecting subjects for RA, but this source of confounding is open to empirical assessment. The confound from selecting subjects to favour RA reactive

sensitivity in the RA/SRR specific-sensitivity comparison is present if there is a significant correlation, in RA, between reactive sensitivity and indices of specific sensitivity. If this correlation is absent, then an $RA > SRR$ result is unambiguously interpretable as greater specific sensitivity for RA over SRR.

Method

Study Materials for Analysis

The psychophysiological records were taken from the charts of 30 guilty subjects⁷ (25 males and 5 females), whose mean age was 37.8 years. The guilty classification was based on confessions provided later to an interrogator who was not the CIT tester; the CIT does not include interrogation as part of the procedure, in contrast to the North American "control" question "test" (see, e.g., Furedy, 1996a). The tests were administered in 12 forensic science laboratories of Japanese prefecture police departments. These laboratories sent to the first and second authors, records of those examinees, later found guilty, who manifested at least one RA; this represented approximately 10% of the total number of examinees tested in these prefectures.

Each test had been conducted in a quiet room by a trained police polygrapher. They gave their examinees a CIT, which consisted of one critical question (CRQ) and four to six control questions (COQs). The intervals between each question ranged from 15 to 20 seconds, and the same series of questions were repeated two, three or four times. The variations in number of COQs and number of repetitions are within the acceptable limits of field CIT procedures, and allow sufficient sampling to find a $CRQ > COQ$ result (inference of guilt) at lower than a 5% level of statistical significance.

⁷When referring to experiments (in contrast to the present study), we employ the term "subjects" rather than "recent participants," in violation of the American Psychological Association's recent ruling. We do this to be consistent with the view, detailed elsewhere (Furedy, 2002), that in epistemological terms, individuals on whom experimentation is conducted are subjects who have to be ethically treated, but not given any epistemological status that the term "research participant" suggests.

Categorical and Statistical Analysis

For each subject, a binary classification was applied to the questions in terms of whether their relation to the crime was close or high (Hi), or less close or low (Lo). This Hi/Lo categorization yielded at least one of the Hi and Lo CRQs (and four to six Hi and Lo COQs). The Hi questions were directly related to the crime, and dealt with such issues as the nature of the crime, tools used to commit the crime, and the general locale where the crime was committed (e.g., burglar entry from balcony, ring as the stolen item, knife as the killing tool, stealing a car that had stopped at the post office, and abducting a girl from the park). The Lo questions were not closely related to the crime, and dealt with such issues as precise amounts of money involved, precise time that the crime was committed, colour of the robber's bag, and precise words that the victim spoke.

The recordings of physiological responses were obtained from Lafayette field model polygraphs used by Japanese police polygraphers. These machines register skin resistance, respiration, and cardiovascular activity (relative blood pressure obtained from a constantly inflated pneumatic pressure cuff on the examinee's arm). For this study, we employed only the respiration and skin-resistance channels. The former function was recorded with two pneumatic rubber tubes around the thorax and abdomen, while SRR was recorded from electrodes attached to the index and fourth fingers of the right hand.

The skin resistance response (SRR) was defined as the largest decrease in resistance occurring during 5 seconds following question onset, with decreases less than 0.5 mm on the chart being considered to be a zero SRR. This approximates the method of SRR scoring used by field polygraphers.

In field polygraphy, aspects of respiration such as changes in amplitude and frequency are usually measured, but in this study we were interested in respiratory apnea (RA). This was defined as the longest period of breath cessation within 10 seconds following question onset, with breath cessations of less than 2 seconds duration being considered to be zero RA responses. The percent zero SRRs

and RA responses, respectively, in our sample of 30 charts, was 16.1% and 34.1%. It will be noted that even though the sample was selected on the basis of having at least one RA response for each subject, the frequency of zero RA responses was much higher than that for the SRRs.

As the study was designed to fairly compare the specific and reactive sensitivities of the SRR and RA responses, the option of using magnitude and duration, respectively, for the two measures appeared inappropriate. The problem is that this treats the two measures as if they were of comparable interval-scale status, for which the zero value is equally meaningful. Whereas the criterion for zero responding for the SRR (of 0.5 mm.) is relatively well established, there is not enough known about the relatively new RA response to determine whether the 2-second zero-response criterion was equally adequate. Even the detection-of-deception-based CIT measure of percent time that CRQ responding exceeded COQ responding (percent time is frequently used in EEG measurement of waves like alpha) was dubious because, especially in the case of the RA response, the frequency of zero responding was considerable.

Accordingly, we designed the following rank-order, nonparametric statistical method of analysis for being able to compare SRRs and RA responses more validly than by making the questionable assumption that both could be expressed as measures with equal interval-scale status. The SRRs and RA responses to the four sorts of questions (CRQ vs. CRQ and Hi vs. Lo) were expressed in terms of mean ranks for each subject. For example, if a given set of one CRQ and four COQs yielded the largest response to one of the COQs, a smaller response to the CRQ, and no responding to the other remaining three COQs, then the ranks 2, 1, and 4 would be assigned, respectively, to the CRQ, the COQ that elicited a response, and the remaining three COQs that failed to elicit a response, and the mean rank for the COQs in this set would be $(1 + 4 + 4 + 4)/4 = 3.33$. Each of the 30 subjects had four mean rank scores based on their responses to Hi and Lo emotional-content CRQs and COQs, to which nonparametric, 2×2 rank-order analyses of variance (ANOVAs) could be applied for SRR and RA. Statistical tests for

normality of the distributions of CRQ scores for Hi and Lo emotional items indicated an absence of any significant departure from normality either in SRR or in RA, $p > 0.10$, so these rank-order ANOVAs appeared to be an appropriate mode of inferential statistics; the alpha level for rejection of the null hypothesis was set at 0.05.

Results

The top panel of Figure 1 summarizes the SRR results. As suggested by the trends, a 2×2 ANOVA with Question Type (CRQ vs. COQ) and Crime Relatedness (Hi vs. Lo) as the two factors yielded only a significant main effect of Question Type (CRQ > COQ), $F(1, 27)$

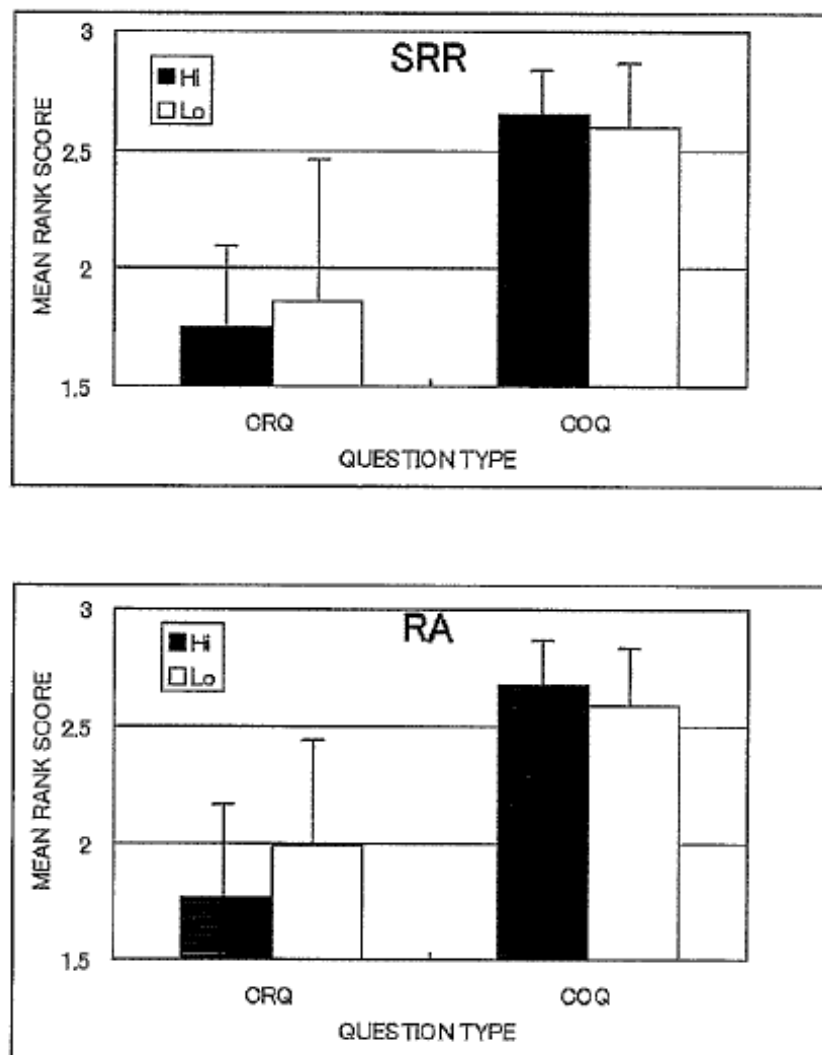


Figure 1. Mean rank based on largest skin resistance response (top panel) and longest respiratory apnea (bottom panel) as a function of question type (CRQ vs. COQ) and crime relatedness (Hi vs. Lo).

Note. The greater the response, the lower the mean rank value.

= 65.87, $p < 0.001$, with F values of 0.26 and 1.42 for the Crime Relatedness main effect and the two-way interaction, respectively. The SRR, then, exhibited clear reactive sensitivity, but no specific sensitivity.

The RA results, summarized in the bottom panel of Figure 1, yielded the same significant reactive-sensitivity CRQ > COQ effect, with an even larger F value, $F(1, 27) = 99.99$, $p < 0.001$, than for the SRR; however, a separate analysis from a three-way ANOVA indicated that this apparent difference in reactive sensitivities of RA and SRR was not itself significant, $F(1, 26) = 2.47$, ns.

In contrast to the SRR results, the RA data yielded a significant Crime Relatedness (Hi > Lo) effect, $F(1, 28) = 4.31$, $p < 0.05$, as well as an interaction between Question Type and Crime Relatedness, $F(1, 26) = 5.57$, $p < 0.05$. As inspection of the bottom panel of Figure 1 indicates, the two aspects or interpretations of this interaction are that: (a) the CRQ/COQ difference (which is the basic guilt-classification category in the CIT) is greater with Hi-crime-relatedness questions than with Lo-crime-relatedness questions, and (b) the Crime Relatedness (Hi > Lo) effect occurs only with the CRQs (left), this relation being actually reversed with the COQs (right).

To obtain further information about the ANOVA results, correlations were calculated to check whether the evidence for reactive sensitivity in RA was due to suspects being selected on the basis of RA responsivity, a selection criterion that could have favoured RA for reactive sensitivity. The computed correlations, over suspects, were those between reactive sensitivity (CRQ > COQ) on the one hand, and the differences indicating specific sensitivity on the other hand. Reactive sensitivity of RA was not significantly correlated with either the Crime Relatedness main effect (Hi > Lo) or with the interaction effect between Question Type and Crime Relatedness, $r = -0.24$ and $r = -0.28$, respectively.

Discussion

The skin resistance response or "GSR" showed the well-established reactive sensitivity to what is the basis of the concealed

information test (larger reaction, in the guilty, to critical than to control questions) but no specific sensitivity. In contrast, the newer the respiratory apneic response showed not only reactive, but also specific, sensitivity to the difference in the extent to which questions were connected with the (serious) crime. One aspect of this psychophysiological differentiation exhibited by the respiratory measure was the significant Crime Relatedness main effect, where questions more closely related to the crime elicited larger (i.e., longer) respiratory pauses than those less closely related to the crime. In addition, two more aspects of psychophysiological differentiation exhibited by the respiratory measure arose from the significant interaction between the Question Type and Crime Relatedness factors (see Figure 1, bottom panel), where each of the main effects from these factors was qualified by the other factor.

From an applied detection-of-guilt perspective, the more significant of the two aspects of the interaction is the increase in reactive sensitivity of the more relative to the less crime-connected questions in the respiratory index. These group-based findings could suggest that in using the respiratory-apnea measure to infer guilt for individual cases, more weight should be given to responses elicited by questions that are more closely related to the crime. In contrast, the more usually employed electrodermal response measure should not be weighted in terms of the degree of crime relatedness of the questions asked.

From a basic research perspective focusing on the nature of the psychological mechanisms involved in the CIT, it is the Crime Relatedness main effect, and the qualification of this main effect by the Question Type factor that are of central interest. An alternative to the emotional interpretation of the Question-Type main and interactive effects is that they are due simply to the greater salience of the Hi relative to Lo questions, and it is this greater salience that produces greater attention to the Hi CRQs. This alternative attentional interpretation is less plausible, however, than the emotional one, because it was only RA and not SRR that yielded this sort of specific sensitivity. In addition, it will be recalled that the RA

phenomenon itself occurs only in the field and not in the more game-playing-like laboratory situation.

If it is assumed that Crime Relatedness reflects the amount of emotion associated with the question, then the respiratory apnea results can be viewed as indicating the presence of an emotional psychological mechanism, as well as the more cognitive, orienting sorts of mechanisms that are commonly thought to underlie the CIT. Moreover, this emotional factor appears to be specific to questions that are critical (i.e., having to do with information being concealed of the actual crime by the guilty -- recall that in the CIT, there are critical questions only for those guilty suspects who are concealing information), inasmuch as the Hi > Lo emotion effect in the respiratory measure occurred only with the CRQs (see Figure 1, lower panel).

Moreover, correlational analyses indicated that this evidence for the respiratory measure's specific sensitivity to emotional factors in this field study was not a result of confounding through suspects being selected on the basis of manifesting at least one respiratory apneatic response. This potential confound was shown not to operate, because

there was no correlation between specific and reactive sensitivity in the respiratory measure.

Regarding the relative reactive sensitivities of the electrodermal and respiratory measures, because of the selection of suspects in favour of the latter measure, only an SRR > RA reactive-sensitivity outcome was unambiguously interpretable in favour of the SRR (which has been generally the most reactively sensitive of all the autonomic measures employed). This outcome did not occur. Rather, both measures showed considerable reactive sensitivity, both as judged by the high F values for the Question Type main effect, and by the fact that of the 30 suspects, 29 and 28 showed mean CRQ > COQ outcomes for RA and SRR, respectively. The latter outcome suggests an encouraging level of CIT accuracy for individual criminal cases, although this is only a tentative conclusion, given that this study was not an experiment, and lacked both an innocent control group as well as certainty about whether the 30 suspects were indeed guilty.

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Errata

In the previous issue of *Polygraph* (34[3]), the article entitled *Credibility Assessment Methods for the New Century*, authored by Krapohl and Trimarco, appeared without acknowledging reprint authorization. This article originally appeared in the *National Academy Associate*, 7(1), pages 9-32 and was reprinted with permission from the Federal Bureau of Investigation National Academy Associates.

In the same issue, the Cullen and Bradley article entitled *Positions of Truthfully Answered Controls on Control Question Tests with the Polygraph* originally appeared in the *Canadian Journal of Behavioral Science*.

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